

# Postgraduate Diploma

## Elaboration of Individualized Medicines for Topical Administration





## Postgraduate Diploma Elaboration of Individualized Medicines for Topical Administration

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

Website: [www.techtute.com/us/pharmacy/postgraduate-diploma/postgraduate-diploma-elaboration-individualized-medicines-topical-administration](http://www.techtute.com/us/pharmacy/postgraduate-diploma/postgraduate-diploma-elaboration-individualized-medicines-topical-administration)

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01

# Introduction

The development of industry and the discovery of new synthetic medicines has transformed the concept of medicine. We have gone from an individualized medicine for a specific patient and specific needs, to a global medicine. That is, for a specific disease, but intended for a large number of patients.

*Learn about the latest advances in  
Elaboration of Individualized Medicines for  
Topical Administration*





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*The Postgraduate Diploma in Elaboration of Individualized Medicines for Topical Administration contains the most complete and up to date scientific program on the market"*

Industrialized medicine has been a breakthrough in current therapeutics, since many patients have found a remedy for their illnesses.

However, this industrialized drug does not cover all therapeutic needs. For various reasons, there are therapeutic gaps that only the Individualized Medicine can fill.

The Master Formulation or, nowadays, "individualized medicine" is the essence of the pharmaceutical profession. It has been the starting point of human medicine therapeutics, when patient care was individualized.

The master formula, understood as the medicine intended for an individualized patient, prepared by or under the direction of a pharmacist, to expressly comply with a detailed medical prescription of the medicinal substances it includes, requires that the professional activity be adjusted to strict and faithfully reproducible procedural guidelines. In this sense, pharmacists need to be updated and promote continuous training in the knowledge and compliance with the standards for the correct preparation and quality control of master formulas in order to achieve the required level of quality.

The objective of this program is to train pharmacists in a discipline unique and exclusive to their profession, training professionals who can respond to therapeutic gaps with the formulation of an individualized drug with the quality and efficacy of an industrialized drug.

This **Postgraduate Diploma in Elaboration of Individualized Medicines for Topical Administration** contains the most complete and up to date scientific program on the market. The most important features of the program include:

- ◆ Clinical cases presented by experts in the different specialties. The graphic, schematic, and eminently practical contents of which they are composed provide scientific and practical information on the disciplines that are essential for professional practice.
- ◆ News on the development of individualized topical drug development
- ◆ Algorithm-based interactive learning system for decision-making in the presented clinical situations.
- ◆ With a special emphasis on evidence-based medicine and research methodologies in Elaboration of Individualized Medicines for Topical Administration.
- ◆ All this will be complemented by 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.

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*This Postgraduate Diploma may be the best investment you can make in the selection of a refresher program for two reasons: in addition to updating your knowledge in the Elaboration of Individualized Medicines for Topical Administration, you will obtain a Postgraduate Diploma from TECH - Technological University".*

Its teaching staff includes health professionals belonging to the field of pharmacology, who bring to this training the experience of their work, in addition to recognized specialists belonging to 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 training program to train in real situations.

This program is designed around Problem Based Learning, whereby the physician must try to solve the different professional practice situations that arise during the course. This will be done with the help of an innovative interactive video system developed by renowned experts in the field of pharmacology with extensive teaching experience.

*Increase your confidence in decision making by updating your knowledge through this Postgraduate Diploma in Elaboration of Individualized Medicines for Topical Administration*

*Don't miss the opportunity to update your knowledge in Elaboration of Individualized Medicines for Topical Administration to improve patient care*



02

# Objectives

The main objective of the program is the development of theoretical and practical learning, so that the health professional can master in a practical and rigorous way the study of the Elaboration of Individualized Medicines for Topical Administration.





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*This refresher program will generate a sense of security in the elaboration of dosage forms, which will help you grow personally and professionally"*



## General Objective

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- ♦ Guarantee the correct preparation, by the pharmacist, of master formulas and office preparations according to current regulations by means of theoretical/practical training complementary to that acquired in the degree/licensure, updating knowledge, forming skills and developing attitudes.



## Specific Module Objectives

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- ♦ Establish suitable laboratory conditions for product preparation.
- ♦ Explain the registry of raw materials as well as production reports.
- ♦ Explain the proper completion of the patient information leaflet.
- ♦ Define the basic principles of packaging in master formulation.
- ♦ Explain the quality control to be carried out in the preparation of dosage forms.
- ♦ Explain the use of active ingredients for each of the pharmaceutical forms.
- ♦ Explain the current legislation on the elaboration and quality control of master formulas and officinal preparations.
- ♦ Explain resources and sources of consultation in the Master Formulation laboratory.
- ♦ Describe proper tool handling
- ♦ Proper use of measurement systems



- ◆ Explain the significant differences and peculiarities in the preparation of different topical dosage forms.
- ◆ Carry out the operations of elaboration and/or control according to the established norms of correct elaboration and quality control of magistral formulas and office preparations.
- ◆ To make the corresponding records.
- ◆ Explain what is the emulsion sign?
- ◆ Explain what is involved in the testing of organoleptic characteristics, final weight/volume.

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*Take the opportunity and take the step to get up to date on the latest developments in Elaboration of Individualized Medicines for Topical Administration”*

03

# Course Management

This program includes in its teaching staff health professionals of recognized prestige, who belong to the field of pharmacology and who bring to this training the experience of their work.

In addition, renowned specialists, members of prestigious national and international scientific communities, are involved in designing and preparing the program.



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*Learn from leading professionals the latest advances in the development of Individualized Topical Medication Development”*

## Director



### Dr. Sánchez Guerrero, Amelia

- ♦ Head of the Hospital Pharmacy Service at the Puerta del Hierro U.H. in Majadahonda since February 2015. }
- ♦ Doctorate. Doctor Complutense University. Madrid.
- ♦ Degree in Pharmacy. Complutense University of Madrid. Madrid.
- ♦ Member of the Teaching Commission. Puerto de Hierro U.H. Majadahonda.
- ♦ Chairman of the Pharmacy and Therapeutics Committee. Puerto de Hierro U.H. Majadahonda.
- ♦ Know, understand and value your pharmacist within the hospital. Correo Farmacéutico Award for one of the Best Pharmacy Initiatives of the Year 2017 in the Pharmaceutical Care and Health Education section. Madrid, April 2018.
- ♦ Know, understand and value your pharmacist within the hospital. Sanitaria 2000 Award "Visibility of the hospital pharmacist in the hospital setting" organized by the SEFH and Redacción Médica. IV Global Meeting of Hospital Pharmacy. Córdoba, April 2018.

## Professors

### Dr. Santiago Prieto, Elvira

- ♦ Head of the non-hazardous sterile, non-sterile and nutritional drug processing area of the Pharmacy Service of HUPHM.
- ♦ Assistant pharmacist. Jiménez Díaz foundation Puerta de Hierro- Majadahonda.
- ♦ Specialist Pharmacist in Hospital Pharmacy, hired by the Foundation for Biomedical Research of the Puerta de Hierro University Hospital. 2013-2014
- ♦ Resident Pharmacist. Specialization in Hospital Pharmacy. Puerto de Hierro U.H. - Majadahonda. 2009-2013
- ♦ Degree in Pharmacy. Faculty of Pharmacy. Complutense University of Madrid.
- ♦ Master's Degree in Pharmaceutical Sciences. Speciality: "Community pharmacy and quality of care". UCM.

### Rodríguez Marrodán, Belén

- ♦ FEA Specialist in Hospital Pharmacy. Pharmacy Department. Puerto de Hierro U.H. Majadahonda.
- ♦ Degree in Pharmacy from the Complutense University of Madrid
- ♦ Specialist in Hospital Pharmacy. Ministry of Education and Culture
- ♦ Member of the Working Group on Safety in the Use of Medication in Pediatrics. Puerta de Hierro U.H. Majadahonda
- ♦ Member of the Clinical Research Ethics Committee (CEIm). Puerta de Hierro U.H. Majadahonda
- ♦ Hospital Pharmacy Resident Tutor. Puerta de Hierro U.H. Majadahonda
- ♦ Member of the Medicines Committee. Spanish Association of Pediatrics
- ♦ SMFH Secretariat. Madrid Society of Hospital Pharmacists
- ♦ Member of the Quality of Care and Patient Safety Working Group. Spanish Society of Hospital Pediatrics
- ♦ Diploma in Pharmaceutical Oncology. University of Valencia

### Dr. García Sanz, Elena

- ♦ Assistant in the Hospital Pharmacy Department of the Puerta de Hierro U.H. Majadahonda.
- ♦ Degree in Pharmacy. Complutense University of Madrid
- ♦ Master's Degree in Pharmaceutical Care in the Pharmaceutical Care environment. University of Valencia
- ♦ Doctor of Pharmacy. Complutense University of Madrid
- ♦ Member of the Procurement Group of the Council. General Subdirectorate of Pharmacy and PS of the Council.
- ♦ Associate Professor of Student Internships 5th year Pharmacy. Complutense University of Madrid. Madrid

### Dr. Gumiel Baena, Inés

- ♦ Inpatient pharmaceutical care. Puerta de Hierro U. Hospital Majadahonda. Madrid.
- ♦ Degree in Pharmacy. Complutense University of Madrid, Spain. 2010-2015.
- ♦ Speciality in Hospital Pharmacy. Puerta de Hierro University Hospital Majadahonda, Madrid -2016 -2020.
- ♦ Master's Degree in Health Products. University of Granada. –Feb-Dic 2019.
- ♦ Pharmacokinetics. Severo Ochoa University Hospital.
- ♦ Primary Care Pharmacy. Northwest Assistance Directorate. SERMAS.
- ♦ General Subdirectorate of Pharmacy and Health Products. Health Council of SERMAS.
- ♦ Antibiotic optimization program. Getafe University Hospital.

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 pharmaceutical practice, aware of the relevance of current training in order to develop individualized dosage forms in a safe and efficient manner and committed to quality teaching through new educational technologies.







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*This Postgraduate Diploma in the Development of Individualized Medicines for Topical Administration contains the most complete and up to date scientific program on the market"*

## Module 1. Biopharmaceutics and Pharmacokinetics

- 1.1. New Aspects of Galenic Pharmacy.
  - 1.1.1. Introduction.
  - 1.1.2. Chemical, Therapeutic and Biological Equivalence of Medicines.
  - 1.1.3. Biopharmaceutics and Basic Pharmacokinetics.
  - 1.1.4. Pharmaceutic Technology.
  - 1.1.5. Clinical Pharmacokinetics.
- 1.2. Evolution of Medicines in the Body.
  - 1.2.1. LADME.
  - 1.2.2. Kinetics of LADME Processes.
  - 1.2.3. Release as a Limiting Factor of Absorption.
- 1.3. Absorption Mechanisms.
  - 1.3.1. Passive Diffusion.
  - 1.3.2. Convective Diffusion.
  - 1.3.3. Active Transport.
  - 1.3.4. Facilitated Transport.
  - 1.3.5. Ion Pairs.
  - 1.3.6. Pinocytosis.
- 1.4. Routes of Administration.
  - 1.4.1. Oral Route.
    - 1.4.1.1. Physiological Factors Affecting Gastrointestinal Absorption.
    - 1.4.1.2. Physicochemical Factors Limiting Absorption.
  - 1.4.2. Topical Route.
    - 1.4.2.1. Structure of the Skin.
    - 1.4.2.2. Factors Influencing the Absorption of Substances Through the Skin.
  - 1.4.3. Parenteral Route.
    - 1.4.3.1. Parenteral Aqueous Solutions.
    - 1.4.3.2. Delayed Parenteral Solutions.

## Module 2. Topical Pharmaceutical Dosage Forms

- 2.1. Solutions.
  - 2.1.1. Aqueous Solutions.
  - 2.1.2. Alcoholic Solutions.
  - 2.1.3. Hydroalcoholic Solutions.

- 2.1.4. Liposome Solutions or Liposomes.
  - 2.1.4.1. Liposomes and Types.
  - 2.1.4.2. Composition of Liposomes.
  - 2.1.4.3. Functions of Liposomes.
  - 2.1.4.4. Production of Liposomes. Pharmacy and Industry.
  - 2.1.4.5. Quality Control
- 2.1.5. Foams.
- 2.1.6. Problems in the Production of Solutions.
- 2.2. Emulsions.
  - 2.2.1. Definition.
  - 2.2.2. Emulsion Components.
  - 2.2.3. Types of Emulsifiers.
  - 2.2.4. Production.
  - 2.2.5. HLB Balance.
  - 2.2.6. Quality Control
  - 2.2.7. Problems and Solutions in the Production Process.
- 2.3. Gels.
  - 2.3.1. Mechanisms for Forming a Gel.
  - 2.3.2. Classification of Gelling Substances.
  - 2.3.3. Quality Control
  - 2.3.4. Problems and Solutions in the Production Process.
- 2.4. Ointments and Pastes.
  - 2.4.1. Definition.
  - 2.4.2. Types.
  - 2.4.3. Quality Control
  - 2.4.4. Problems and Solutions in Paste Processing.
- 2.5. Transdermal Creams.
  - 2.5.1. Definition.
  - 2.5.2. Mechanism of Action.
  - 2.5.3. Most Common Active Ingredients in Transdermals.
  - 2.5.4. Production.
    - 2.5.4.1. PLO Gel.
    - 2.5.4.2. PEN type TD creams.
  - 2.5.5. Uses.

- 2.5.5.1. Paliative Pain Therapy.
- 2.5.5.2. HRT Therapy.
- 2.5.6. Quality Control
- 2.6. Application in Dermatology of Pharmaceutical Forms for Topical Administration.
  - 2.6.1. Skin. Structure and Functions.
    - 2.6.1.1. Epidermis.
    - 2.6.1.2. Dermis.
    - 2.6.1.3. Hypodermis.
  - 2.6.2. Common Pathologies.
  - 2.6.3. Master Formulas Frequently Used in Dermatology.
- 2.7. Application in Podiatry of Pharmaceutical Forms for Topical Administration.
  - 2.7.1. The Foot.
  - 2.7.2. Common Pathologies.
  - 2.7.3. Master Formulas Frequently Used in Podiatry.
- 2.8. Application in Otorhinology of Pharmaceutical Forms for Topical Administration.
  - 2.8.1. Introduction.
  - 2.8.2. Common Pathologies.
  - 2.8.3. Master Formulas Frequently Used in Otorhinology.

### Module 3. Pharmaceutical Forms of Administration in Mucous Membranes

- 3.1. Oral Mucosa.
  - 3.1.1. Features.
  - 3.1.2. Pathologies.
- 3.2. Application in Dentistry.
  - 3.2.1. Introduction.
  - 3.2.2. Common Pathologies.
  - 3.2.3. Common Master Formulas.
- 3.3. Vaginal Mucosa.
  - 3.3.1. Features.
  - 3.3.2. Ovules.
    - 3.3.2.1. Production.
    - 3.3.2.2. Excipients.
    - 3.3.2.3. Quality Control
  - 3.3.3. Pathologies.

- 3.3.4. Usual Master Formulas in Gynecology.
- 3.4. Rectal Mucosa.
  - 3.4.1. Enemas.
    - 3.4.1.1. Production.
    - 3.4.1.2. Excipients.
    - 3.4.1.3. Quality Control
  - 3.4.2. Suppositories.
    - 3.4.2.1. Production.
    - 3.4.2.2. Excipients.
    - 3.4.2.2. Quality Control
  - 3.4.3. Enemas.
    - 3.4.3.1. Production.
    - 3.4.3.2. Excipients.
    - 3.4.3.3. Quality Control
  - 3.4.4. Suppositories and Ovules.
    - 3.4.4.1. Production.
    - 3.4.4.2. Excipients.
    - 3.4.4.3. Quality Control

### Module 4. Excipients and Bases Used in Master Formulation

- 4.1. Water, the Most Commonly Used Excipient.
  - 4.1.1. Types of Water Used in Master Formulation.
    - 4.1.1.1. Purified Water.
    - 4.1.1.2. Water for Injectables.
  - 4.1.2. Procurement.
- 4.2. Simple Excipients.
  - 4.2.1. Non-Aqueous Excipients.
  - 4.2.2. Other Commonly Used Excipients.
  - 4.2.3. Excipients of Obligatory Declaration.
- 4.3. Compound Excipients.
  - 4.3.1. Solid Oral Forms.
  - 4.3.2. Liquids Oral Forms.
  - 4.3.3. Compound Bases.

05

# Methodology

This training provides you with a different way of learning. Our methodology uses a cyclical learning approach: ***Re-learning***.

This teaching system is used 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 Re-learning, 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 we use the Case Method

In a given clinical situation, what would you do? Throughout the program, you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Pharmacists learn better, more quickly and more sustainably over time.

*With TECH you can experience a way of learning 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 potential or because of its uniqueness or rarity. It is essential that the case is based on current professional life, attempting to recreate the actual conditions in a pharmacist's professional 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. Pharmacists who follow this method not only achieve the assimilation of concepts, but also develop their mental capacity through exercises to evaluate real situations and apply their knowledge.
2. The learning process has a clear focus on practical skills that allow the student to better integrate into the real world.
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.



## Re-learning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Re-learning.

Our University is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, which represent a real revolution with respect to simply studying and analyzing cases.



*Pharmacists 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 Re-learning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best Spanish-speaking online university (Columbia University).

With this methodology we have trained more than 115,000 pharmacists with unprecedented success, in all clinical specialties. Our pedagogical methodology is developed in a highly demanding environment, with a university student body with a high socioeconomic profile and an average age of 43.5 years old.

*Re-learning 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 (we learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

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



In this program you will have access to the best educational material, prepared with you in mind:



### Study Material

All teaching material is created specifically for the course by specialist pharmacists who will be teaching the course, so that the didactic development is highly specific and accurate.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



### Video Techniques and Procedures

We bring you closer to the latest techniques, to the newest educational advances, to the forefront of current pharmaceutical care procedures. All this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.



### Interactive Summaries

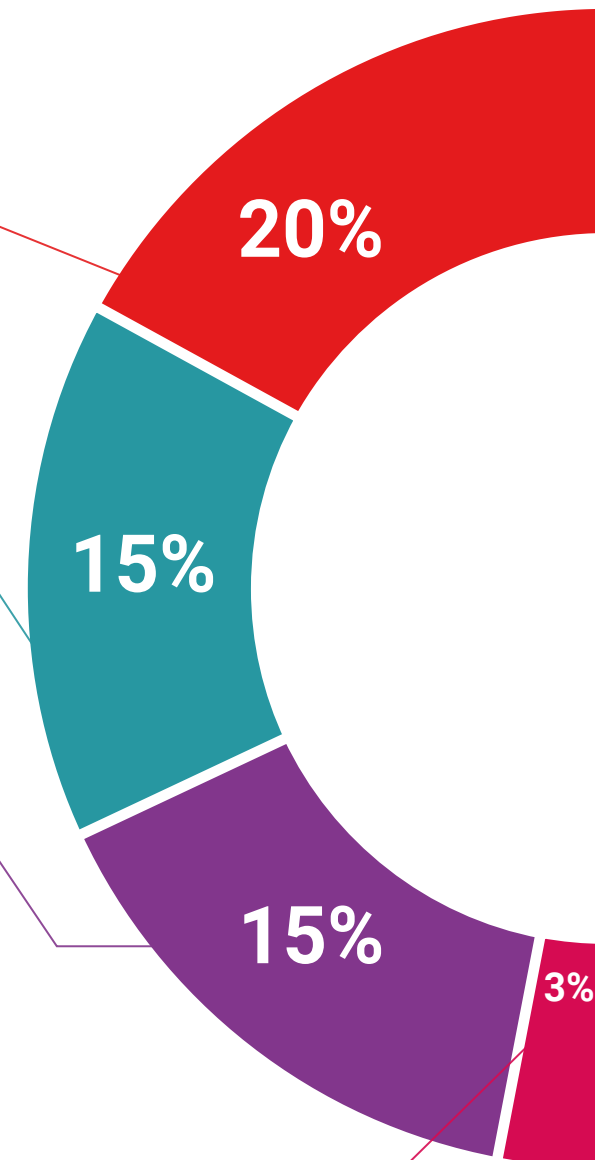
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story"



### Additional Reading

Recent articles, consensus documents, international guides. in our virtual library you will have access to everything you need to complete your training.





**Expert-led case studies and case analysis**

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the expert will guide you through the development of attention and the resolution of different situations: a clear and direct way to achieve the highest degree of understanding.



**Testing & Retesting**

We periodically evaluate and re-evaluate your knowledge throughout the program, through assessment and self-assessment activities and exercises: so that you can see how you are achieving your goals.



**Classes**

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an expert reinforces knowledge and memory, and builds confidence in our difficult future decisions.



**Quick Action Guides**

We offer you the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help you progress in your learning.



06

# Certificate

The **Postgraduate Diploma in Elaboration of Individualized Medicines for Topical Administration** guarantees you, in addition to the most rigorous and up to date training, access to a Postgraduate Diploma issued by **TECH- Technological University**.





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*Successfully complete this training and receive your Postgraduate Diploma without travel or laborious paperwork”*

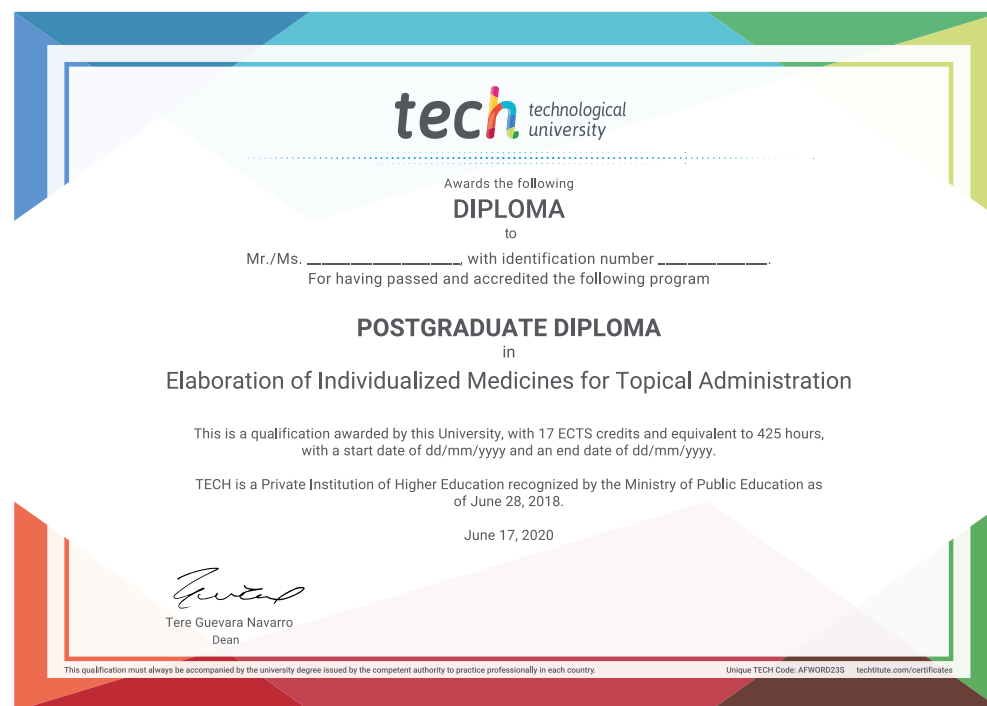
This Postgraduate Diploma in the Development of Individualized Medicines for Topical Administration contains the most complete and up to date scientific program on the market.

After the student has passed the evaluations, they will receive their corresponding Postgraduate Diploma issued by TECH - Technological University.

The diploma issued by TECH - Technological University will specify the qualification obtained through the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: Postgraduate Diploma in Elaboration of Individualized Medicines for Topical Administration

Official Number of Hours: 425 h.



\*Apostille Convention. In the event that the student wishes to have their paper diploma Apostilled, TECH EDUCATION will make the necessary arrangements to obtain it at an additional cost of €140 plus shipping costs of the Apostilled diploma.

health future  
confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present  
development language  
classroom



## Postgraduate Diploma

Elaboration of Individualized  
Medicines for  
Topical Administration

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

# Postgraduate Diploma

## Elaboration of Individualized Medicines for Topical Administration

