

# Postgraduate Certificate

Active Ingredients of Plants,  
Pharmaceutical Forms and  
Galenic Preparations



## Postgraduate Certificate

Active Ingredients of Plants,  
Pharmaceutical Forms and  
Galenic Preparations

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

Website: [www.techtute.com/us/nutrition/postgraduate-certificate/active-ingredients-plants-pharmaceutical-forms-galenic-preparations](http://www.techtute.com/us/nutrition/postgraduate-certificate/active-ingredients-plants-pharmaceutical-forms-galenic-preparations)

# Index

01

Introduction

---

*p. 4*

02

Objectives

---

*p. 8*

03

Course Management

---

*p. 12*

04

Structure and Content

---

*p. 16*

05

Methodology

---

*p. 20*

06

Certificate

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*p. 28*

# 01

# Introduction

Active ingredients are not only the essence of medicines, but also the main protagonist in the formulation and preparation processes that give rise to Galenic Preparations. For this reason it is important for the nutritionist to be at the forefront in the way of relating plant active ingredients, since this way they will be able to broaden their knowledge, complement nutritional therapy and optimize the selection of Pharmaceutical Forms. Therefore, TECH has developed a 100% online program that will allow the professional to deepen in simple phenols, coumarins and magistral formulation. Additionally, this program will give them the possibility to enter at any time and place, since they will only need a device with Internet connection.





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*Thanks to this qualification, you will broaden your knowledge of the main groups of active principles and their application in Phytotherapy”*

Natural active ingredients are the basis of many drugs used in modern medicine. However, for these active ingredients to be effective and safe, they need to be properly formulated and prepared. This is where Pharmaceutical Forms and Galenic Preparations come into play. On the one hand, the dosage forms determine how the active ingredient is physically presented when administered. Finally, Galenic Preparations are the result of the specific formulation and preparation of the active ingredients, with the aim to optimize their stability and release in the organism.

In this sense, it is important for the professional to be able to recommend specific foods or supplements containing these active ingredients that complement and improve the results of nutritional therapy. For this reason, TECH has created a program with the purpose of offering the Nutrition specialist an update on topics such as the correct manufacture of drugs, the application of alkaloids and cardiotoxic heterosides.

A 100% online academic proposal supported by multimedia resources such as videos in detail. Likewise, this content will be available in a virtual library that will allow access 24 hours a day without time restrictions. This will guarantee the expert a unique experience of academic excellence.

This **Postgraduate Certificate in Active Ingredients of Plants, Pharmaceutical Forms and Galenic Preparations** contains the most complete and up-to-date scientific program on the market. The most important features include:

- Practical case studies are presented by experts in Phytotherapy
- 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
- Practical exercises where the self-assessment process can be carried out 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



*With this 100% online program, you will be able to delve deeper into sulphocyanogenetic glucids, lipids, protides and heterosides and how to take advantage of their therapeutic potential"*



*You will delve into and learn how to apply the therapeutic properties of simple phenols, coumarins and lignans in the field of Nutrition"*

The program's teaching staff includes professionals from the sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will allow the professional a situated and contextual learning, that is, a simulated environment that will provide an immersive training programmed to train in real situations.

This program is designed around Problem-Based Learning, whereby students must try to solve the different professional practice situations that arise throughout the program. For this purpose, students will be assisted by an innovative, interactive video system created by renowned and experienced experts.

*You will implement in your work practice the benefits of flavonoids and their application in specific therapeutic treatments.*

*You will harness the power of tannins and quinones to enhance nutrition and well-being.*



# 02 Objectives

The main objective of this program is to provide the nutritionist with the most updated knowledge at the moment of using or recommending the Active Principles of Plants. In this sense, it presents a 100% online academic format that implements the Relearning method, in this way the professional will be able to deepen in the industrial elaboration of medicines based on plants and to differentiate the diverse properties of these active ingredients. This learning will be achieved thanks to the fact that the methodology of the program allows to invest few hours of study and to memorize concepts in a short time.







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*You will learn about isoprenoids, saponins and cardiotoxic heterosides, and how they can contribute to your professional practice, thanks to this Postgraduate Certificate course offered only by TECH"*



## General Objectives

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- Define the therapeutic limits of Phytotherapy and identify the cases in which it can be used safely
- Describe the use of Phytotherapy aimed at satisfying the needs derived from the patient's health problems and the prevention of complications, guaranteeing a safe and quality practice
- Solve cases related to the field of phytotherapy
- Explain the use and indication of medical devices, food supplements and/or drugs, assessing the expected benefits and associated risks
- Apply theoretical knowledge in daily practice





## Specific Objectives

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- Explain the application of the magistral formulation in Phytotherapy
- Explain the industrial processing of herbal medicines
- Define the main groups and properties with relation to the active ingredients
- Define the therapeutic application of phenols, flavonoids, tannins, isoprenoids, resins, alkaloids and other products

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*You will recognize resins and their application in the elaboration of effective natural medicines”*

03

# Course Management

TECH has carefully chosen each of the professors that are part of its educational programs, with the main objective of offering students an excellent education. It is for this reason that this program has gathered a group of experts with vast experience in Phytotherapy. This will guarantee the students a quality and totally innovative learning from the hand of outstanding experts.





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*In only 6 weeks, you will learn about alkaloids and how they can be used for therapeutic purposes”*

## Professors

### Dr. Acero de Mesa, Nuria

- ♦ Pharmaceutical expert in Biotechnology
- ♦ Full Professor, Department of Pharmaceutical and Health Sciences, Faculty of Pharmacy, CEU San Pablo University
- ♦ Main investigator of the Natural Products group at San Pablo University
- ♦ Doctor of Pharmacy
- ♦ Co-author of several scientific publications in specialized media

### Dr. González Rosende, Eugenia

- ♦ Pharmacist and Researcher Specializing in the Therapeutic Area
- ♦ Professor of the Department of Pharmacy at the Faculty of Health Sciences of the CEU Cardenal Herrera University
- ♦ Principal Investigator of the group on the Search for New Compounds with Therapeutic Activity at CEU Cardenal Herrera University
- ♦ Researcher of the SEPLAN group at CEU Cardenal Herrera University
- ♦ Doctor of Pharmacy
- ♦ Author of several specialized books on organic chemistry for the clinical profession

### Ms. Buendía Sánchez, Esmeralda

- ♦ Technical Pharmaceutical Director
- ♦ Technical Pharmaceutical Director Arkopharma Laboratories
- ♦ Director of the Scientific Department, Arkopharma, SA
- ♦ Author of Hypericum in the treatment of depression and co-author of several publications
- ♦ Specialist in Pharmacy

### Dr. Balaguer Fernández, Cristina

- ♦ Pharmacist specialized in transdermal administration therapies
- ♦ Vice-Dean of the Faculty of Pharmacy at Cardenal Herrera University
- ♦ Assistant Professor in the Department of Pharmacy at the Faculty of Health Sciences of the CEU Cardenal Herrera University
- ♦ Coordinator of different Masters at CEU University
- ♦ Doctor in Pharmacy from CEU - Cardenal Herrera University
- ♦ Lectures and communications in national and international congresses

### Dr. Muñoz-Mingarro, Dolores

- ♦ Professor of the Department of Chemistry and Biochemistry of the Faculty of Pharmacy from CEU San Pablo University
- ♦ Researcher
- ♦ Author of more than 30 scientific articles
- ♦ Prize for the best initiative awarded by Correo Farmacéutico for the book Phytotherapy Manual
- ♦ PhD in Biological Sciences from the Complutense University of Madrid
- ♦ Degree in Biological Sciences from the Complutense University of Madrid
- ♦ Degree in Pharmacy from the Complutense University of Madrid
- ♦ Member of: Spanish Society of Chromatography and Related Techniques SECYTA, Iberoamerican Network of Natural Products for Medicinal Use and Research Groups in Ripronamed

**Dr. Calatayud Pascual, Araceli**

- ♦ Director of the Department of Pharmacy, Faculty of Health Sciences, CEU Cardenal Herrera University
- ♦ Assistant Pharmacist in Pharmacy Office
- ♦ Coordinator of the Medicine Degree
- ♦ Coordinator of the External Internships of Medicine
- ♦ Coordinator of the second cycle of the Degree in Medicine
- ♦ Assistant Professor of the University Department of Pharmacy in the Faculty of Health Sciences from CEU Cardenal Herrera University
- ♦ Professor of Pharmacology in the Degree of Medicine at the CEU Cardenal Herrera University
- ♦ Participation in 41 presentations and / oral presentations at national and international conferences
- ♦ Researcher in 8 research projects funded by public and private institutions
- ♦ Author of several scientific publications
- ♦ Doctor of Pharmacy. Cardenal Herrera University CEU
- ♦ Degree in Pharmacy. Cardenal Herrera University CEU
- ♦ Master's Degree in Community Pharmaceutical Care University of Valencia
- ♦ Diploma in Pharmaceutical Performance in Primary Care University of Valencia
- ♦ Specialized pharmacist in Orthopedics University of Valencia

**Dr. López Castellano, Alicia**

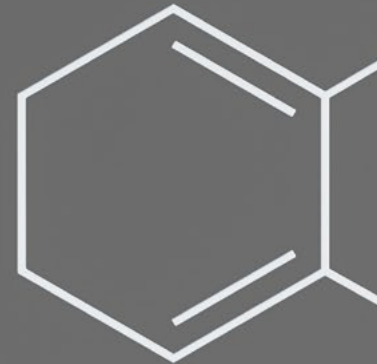
- ♦ Pharmacist Specialist in Industrial and Galenic Pharmacy
- ♦ Researcher and Author of outstanding publications in the area of Phytotherapy and Pharmacy
- ♦ Expert in Pharmacy and Pharmaceutical Technology
- ♦ Reviewer of the most important scientific journals such as: International Journal of Pharmaceutics, Journal of Controlled Release, Journal of Pharmaceutical Science, Drug Development and Industry Pharmacy, Journal of Drug Delivery Science, European Journal of Pharmaceutics and Biopharmaceutics, Technology and Journal of Pharmacy and Pharmacology
- ♦ Director of the Department of Physiology, Pharmacology and Toxicology at CEU Cardenal Herrera University
- ♦ Dean of the Faculty of Health Sciences, CEU Cardenal Herrera University
- ♦ Associate Professor and Senior Research Technician, Department of Pharmacy and Pharmaceutical Technology, University of Valencia
- ♦ Participation in presentations and communications at national and international conferences
- ♦ Doctor of Pharmacy (PhD) from the University of Valencia
- ♦ Degree in Pharmacy
- ♦ Member of: Teacher Evaluation Commission of the Valencian Agency of Evaluation and Prospective (AVAP) of the Valencia Government

04

# Structure and Content

The syllabus included in this program has been put together in order to provide the nutritionist with the necessary knowledge and skills at the time of using the Active Principles of Plants. In this way, the professional will have the certainty of deepening in the most relevant concepts for this field such as the main groups and properties of the active ingredients, simple phenols, coumarins for their therapeutic use, the master formulation in Phytotherapy and the rules of a correct manufacturing of herbal medicines. All this content can be found in this 100% online program, which will allow the professional to coordinate his daily activities with those of their update, since they will not be subject to a preset schedule.

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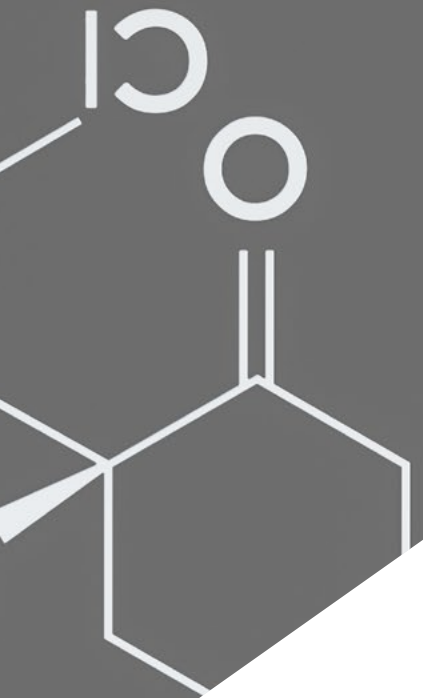


НИ  
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RELEARNING

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*Take advantage of the flexibility and freedom that Relearning offers you to acquire knowledge efficiently and adapted to your needs"*

**Module 1.** Active Principles of Plants, Pharmaceutical Forms and Galenic Preparations

- 1.1. Active Ingredients: Main Groups and Properties, as a Basis that Justifies the use of Phytotherapy
- 1.2. Carbohydrates, Lipids, Proteins, and Sulfo cyanogenetic Heterosides and their Therapeutic Application
- 1.3. Simple Phenols, Coumarins and Lignans, and their Therapeutic Application
- 1.4. Flavonoids and their Therapeutic Application
- 1.5. Tannins and Quinones, and their Application
- 1.6. Isoprenoids, Saponins and Cardiotonic Heterosides, and their Application
- 1.7. Resins and their Application
- 1.8. Alkaloids and their Application
- 1.9. Magistral Formulation in Phytotherapy
- 1.10. Other Pharmaceutical Forms in Phytotherapy
- 1.11. Standards for the Proper Manufacture of Herbal Medicines





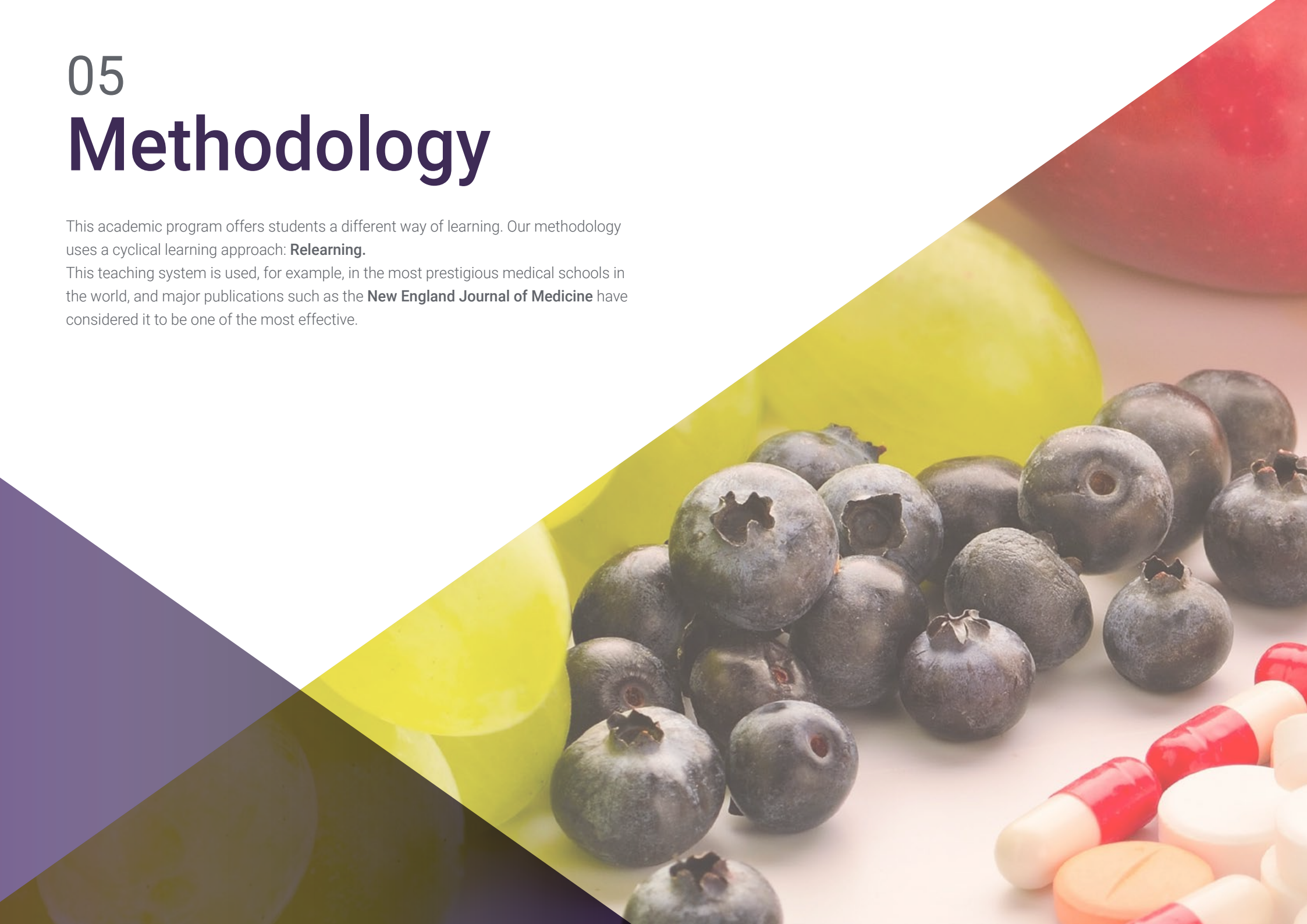
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*You will acquire skills in master formulation in Phytotherapy and create your own personalized preparations”*

# 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 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. Specialists learn better, faster, and more sustainably over time.

*With TECH, nutritionists can experience a way of learning that is shaking the foundations of traditional universities around the world.*



According to Dr. Gérvas, 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, trying to recreate the real conditions of professional nutritional 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. Nutritionists who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity through exercises to evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the nutritionist to better integrate knowledge into clinical practice.
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 the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

*The nutritionist 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, more than 45,000 nutritionists have been trained with unprecedented success in all clinical specialties regardless of the surgical load. 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.*

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 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.



### Nutrition Techniques and Procedures on Video

TECH brings students closer to the latest techniques, the latest educational advances and to the forefront of current nutritional counselling techniques and procedures. 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 the videos as many times as you like.



### Interactive Summaries

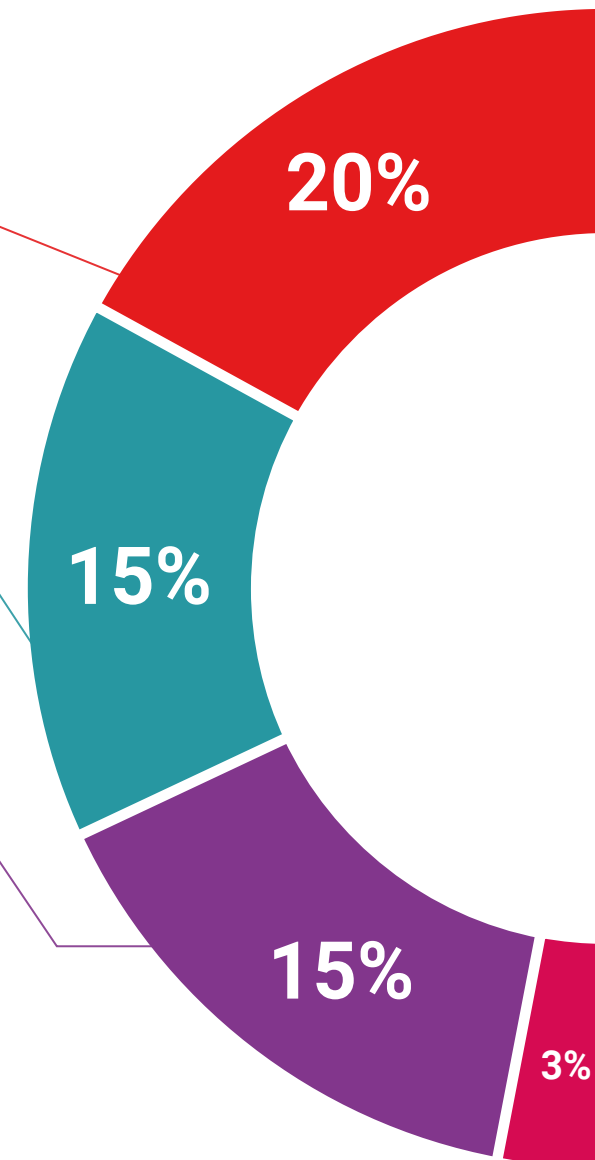
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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 Certificate in Active Ingredients of Plants, Pharmaceutical Forms and Galenic Preparations guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.



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

This **Postgraduate Certificate in Active Ingredients of Plants, Pharmaceutical Forms and Galenic Preparations** contains the most complete and up-to-date scientific 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 diploma issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Certificate, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Certificate in Active Ingredients of Plants, Pharmaceutical Forms and Galenic Preparations**

Official N° of Hours: **150 h.**



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



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