

Postgraduate Certificate  
Hospital Pharmacology  
of the Respiratory System





## Postgraduate Certificate Hospital Pharmacology of the Respiratory System

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

Website: [www.techtute.com/pk/pharmacy/postgraduate-certificate/hospital-pharmacology-respiratory-system](http://www.techtute.com/pk/pharmacy/postgraduate-certificate/hospital-pharmacology-respiratory-system)

# 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

The COVID-19 pandemic has undoubtedly been a war that Pharmacology specialized in the respiratory field has had to face. However, it has not been the only one. Today, the detailed study of the multiple diseases and conditions that affect the respiratory system has had to work with the appearance of new pathological mutations, as well as the discovery of drugs and their possible application in their treatment. All this information is included in this program, so that the specialist can get up to date through a 100% online academic experience. In addition, you will have the support of a teaching team of the highest level that will contribute their experience to the program in the form of multiple additional resources.





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*Enroll in this Postgraduate Certificate and bet on a complete and comprehensive update in Hospital Pharmacology of the Respiratory System”*



Respiratory diseases make up a wide range of possibilities. The increasingly specific knowledge of the functioning of the human body, as well as its histology, has allowed professionals in this field to determine increasingly effective and efficient clinical and pharmacological strategies in the management of diseases such as those affecting the respiratory system. Thus, today there are multiple treatments to treat both common conditions such as asthma or allergic reactions, as well as more complex and rare ones such as Steven-Johnson Syndrome or COPD. However, as in any scientific field, it is a field in constant evolution and more and more specific treatments are constantly being implemented.

For this reason, TECH has considered it necessary to launch a program that gathers, precisely, the latest information on the subject, serving as a trump card for any pharmacy professional in their task of keeping up to date. Thus arises the present Postgraduate Certificate in Hospital Pharmacology of the Respiratory System, a complete program that gathers 150 hours of the best theoretical, practical and additional content based on the advances in underlying mechanisms, emerging therapies and pharmacological strategies for prevention.

During the 6 weeks of the program, the graduates will have full access to a state-of-the-art Virtual Campus, where all the material will be hosted from the beginning of the course, including multimedia resources. In addition, you will have the support of a highly qualified teaching team: experts in Hospital Pharmacology who have worked for weeks to shape an academic experience of the highest level and who, on the other hand, will be at your disposal to answer any questions that may arise during the course of the program.

This **Postgraduate Certificate in Hospital Pharmacology of the Respiratory System** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ◆ The development of practical cases presented by experts in Pharmacy, Hospital Management, among others
- ◆ 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 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



*You will have access to 150 hours of diverse content: theoretical syllabus, case studies and multiple additional material to expand each section in a personalized way"*

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*You will be able to delve into the latest developments concerning asthmatic exacerbation and the underlying mechanisms through the best emerging therapies known so far”*

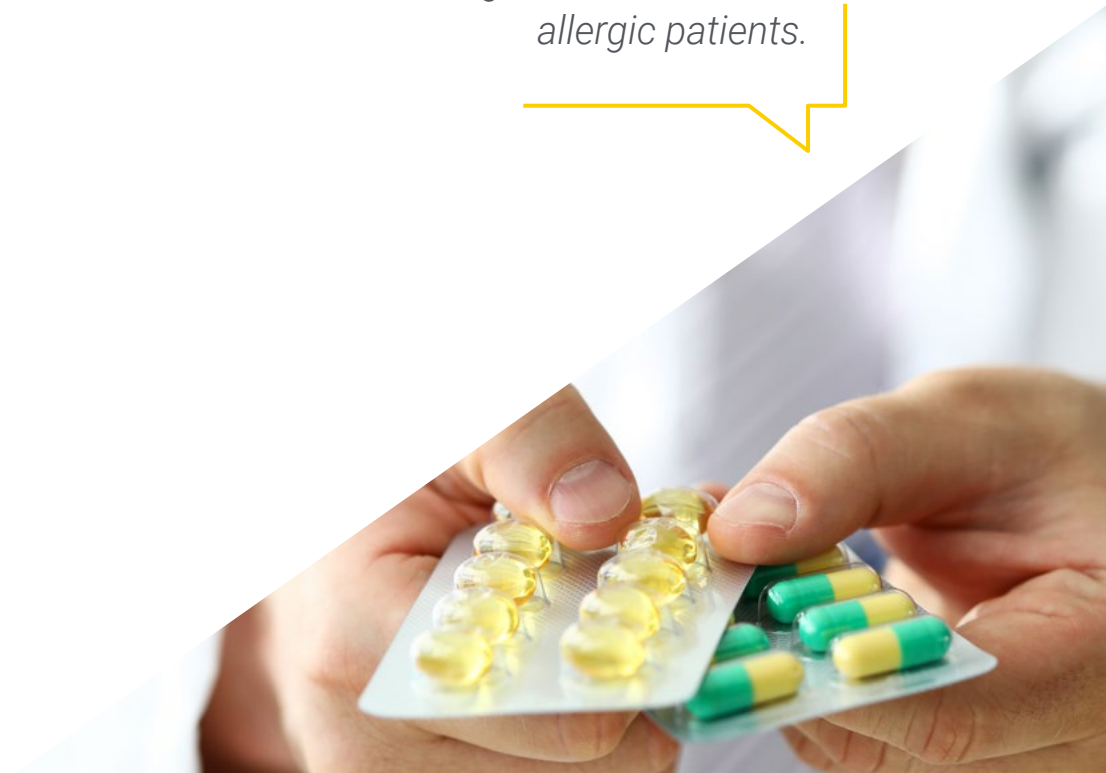
The program's teaching staff includes professionals from the sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will provide the professionals with situated and contextual learning, i.e., a simulated environment that will provide an immersive education programmed to learn in real situations.

The design of this program focuses on Problem-Based Learning, by means of which the professionals must try to solve the different professional practice situations that are presented throughout the academic course. For this purpose, students will be assisted by an innovative interactive video system created by renowned and experienced experts.

*A program that will bring you up to date on the risk factors of the different respiratory diseases, as well as on the pharmacological recommendations for each case.*

*During the 6 weeks you will work on getting up to date about the advice and warnings of the use of certain drugs in asthmatic and allergic patients.*



# 02

# Objectives

TECH works for and to always offer the best academic experiences. This translates into the launching of programs such as this Postgraduate Certificate in Hospital Pharmacology of the Respiratory System, which is a unique opportunity for any professional in the pharmaceutical field to get up to date with the latest developments in their activity. It is the result of weeks of research and analysis, as well as a complex creative process of a complex creative procedure to bring dynamism to the academic experience in combination with a complete and multidisciplinary syllabus.





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*To update you on the symptomatology of various respiratory diseases will allow you to elaborate specific formulas to treat them more effectively”*



## General Objectives

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- ◆ Develop therapeutic and monitoring plans based on medication-related problems, patient- and disease-specific information, and laboratory data
- ◆ Summarize strategies for the procurement, preparation, and administration of time-sensitive therapies

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*You will be brought up to date on complications and risks associated with SIIR in order to refine your management your practice in its management”*





## Specific Objectives

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- ◆ Deepen in asthma its definition, prevalence, acute exacerbation, imaging and laboratory tests, emergency management and pharmacology
- ◆ Define COPD, its prevalence, acute exacerbation, imaging tests and pharmacology
- ◆ Delve into Pneumonia, its definition and incidence, types of Pneumonia, pharmacology
- ◆ Define anaphylaxis, its incidence, types, diagnosis and pharmacology
- ◆ Investigate Steven-Johnson Syndrome (SJS) and Toxic Epidermal Necrolysis (TEN): definitions, etiology, risk factors, clinical presentation, complications, supportive therapy
- ◆ Deepen in the definition, indication, pathophysiology, pharmacology of muscle inducing and paralyzing agents of the Rapid Induction and Intubation Sequence (RIIS)
- ◆ Delve into sedoanalgesia, agitation and delirium, pharmacology of sedative agents in post-intubation sedoanalgesia



03

# Course Management

The teaching team of this program is formed by a multidisciplinary group of experts, all of them professionals of the highest level within the field of Pharmacology. This brings an extra quality and versatility to the program, through a realistic and critical view of the current context. In addition, they have incorporated to the program several theoretical, practical and additional resources of their own authorship, being a significant plus that the graduates will be able to take advantage of to expand each section of the syllabus in a totally personalized way.



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*If you have any questions during the academic experience, you can contact the teaching team through the Virtual Campus to solve them"*



## Management



### Mr. Ramo Rodríguez, Javier

- ♦ Pharmacist at Hospital Corporación Sanitaria Parc Taulí, Sabadell, Spain
- ♦ Coordinating member of the working group of pharmacists specializing in the Emergency Department (RedFaster)
- ♦ Pharmacist specializing in Hospital Pharmacy at Hospital Mútua de Terrassa
- ♦ Pharmacist specializing in Hospital Pharmacy at Consorci Sanitari Integral
- ♦ Resident Pharmacist at Servicio Canario de la Salud (Canary Health Service)
- ♦ Assistant Pharmacist in Pharmacy María Concepción Gutiérrez
- ♦ Assistant Pharmacist in Pharmacy Marina López González
- ♦ Master in Pharmacotherapeutic Follow-up of HIV/AIDS patients by the University of Granada



04

# Structure and Content

The syllabus of this Postgraduate Certificate has been designed and developed by the teaching team following the guidelines of quality and completeness that characterize and differentiate TECH. Thus, the graduates who accesses it will be able to make use of 150 hours of the best theoretical, practical and additional material, which will serve to know in detail the latest developments in Hospital Pharmacology of the Respiratory System in a 100% online way.





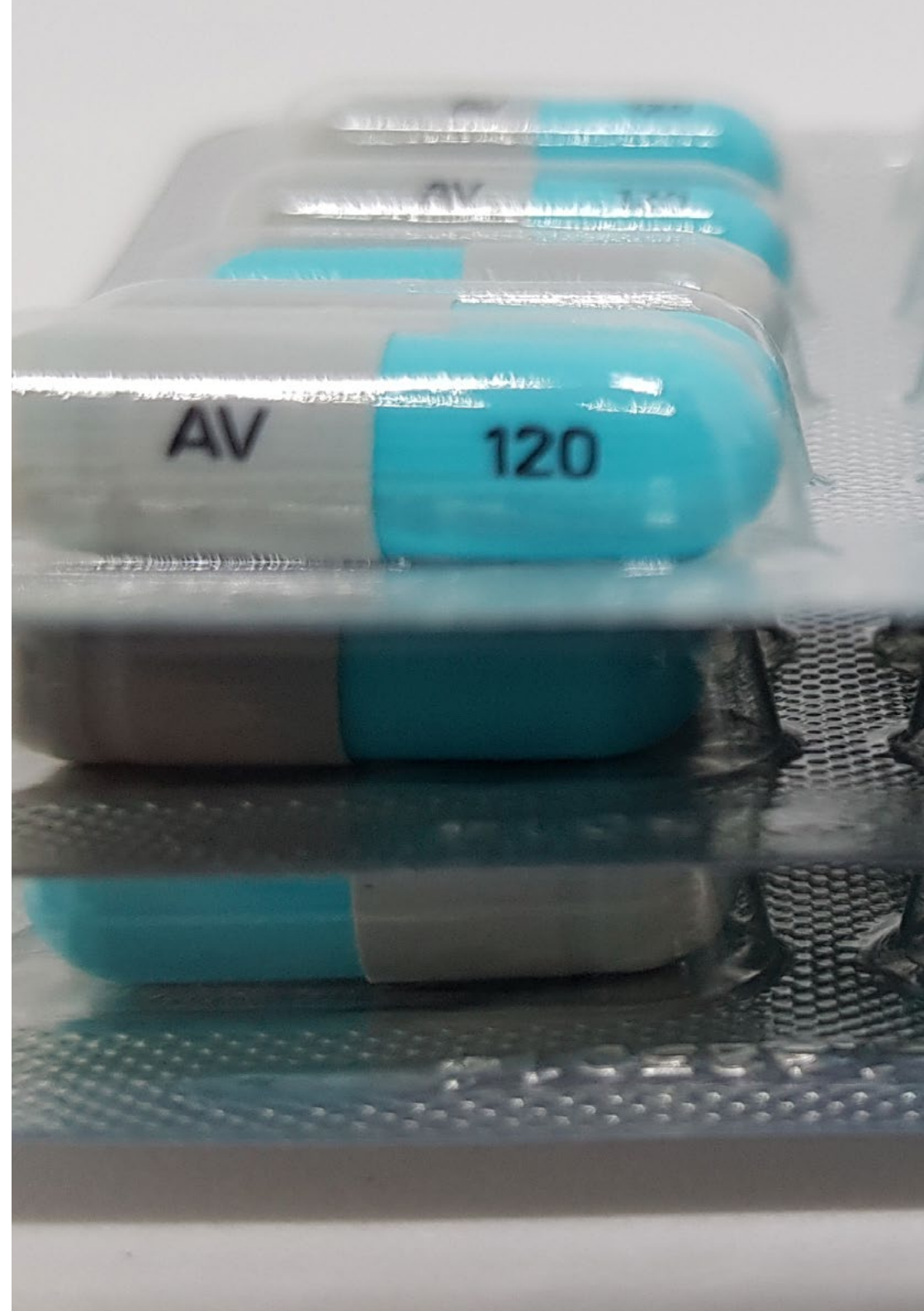
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*The teaching team has selected clinical cases from their own experience, so that you can work on their resolution through the improvement of your professional competences"*



## Module 1. Pharmacology of the Respiratory System

- 1.1. Asthmatic exacerbation
  - 1.1.1. Underlying mechanisms
  - 1.1.2. Emerging therapies
  - 1.1.3. Risk Factors
  - 1.1.4. Prevention strategies
- 1.2. Acute exacerbation of Chronic Obstructive Pulmonary Disease (COPD)
  - 1.2.1. Antibiotics
  - 1.2.2. Medical treatment
  - 1.2.3. Oxygen Therapy
  - 1.2.4. Prevention strategies
- 1.3. Allergic Reaction
  - 1.3.1. Classification of allergies
  - 1.3.2. Types of allergy
  - 1.3.3. Diagnosis
  - 1.3.4. Immunotherapy
- 1.4. Anaphylaxis
  - 1.4.1. Clinical diagnosis
  - 1.4.2. Emergency Treatment
  - 1.4.3. Idiopathic Anaphylaxis
  - 1.4.4. Anaphylaxis in pediatrics
- 1.5. Steven-Johnson Syndrome (SJS) and Toxic Epidermal Necrolysis (TEN)
  - 1.5.1. Risk factors and triggers for SJS and TEN
  - 1.5.2. Clinical and differential diagnosis of JSS and TEN
  - 1.5.3. Emergency management and treatment of JSS and NETs
  - 1.5.4. Role of drugs and infectious agents in the development of JSS and NET
- 1.6. Rapid Induction and Intubation Sequence (SIIR)
  - 1.6.1. Indications and contraindications for SIIR
  - 1.6.2. Complications and risks associated with SIIR and its management
  - 1.6.3. Techniques and approaches for rapid and safe intubation in emergency situations
  - 1.6.4. Monitoring and evaluation during SIIR







- 1.7. Post-intubation sedoanalgesia
  - 1.7.1. Pharmacology of sedative and analgesic agents
  - 1.7.2. Assessment and monitoring of the level of sedation
  - 1.7.3. Strategies for pain control in postintubation patients
  - 1.7.4. Differences in sedation and analgesia according to the type of unit
- 1.8. Pharmacology of Bronchodilators
  - 1.8.1. Action Mechanisms of Bronchodilators
  - 1.8.2. Classification of bronchodilators according to their duration of action and potency
  - 1.8.3. Short-acting versus long-acting bronchodilators
  - 1.8.4. Adverse effects and safety of bronchodilators
- 1.9. Principles of pharmacokinetics and pharmacodynamics as applied to respiratory drugs
  - 1.9.1. Principles of absorption, distribution, metabolism and excretion of respiratory drugs
  - 1.9.2. Influence of age, gender and pathological conditions
  - 1.9.3. Evaluation of the bioavailability of respiratory drugs
  - 1.9.4. Optimization of respiratory drug formulations for better absorption and bioavailability
- 1.10. Pharmacology of antibiotics and antivirals in respiratory infections
  - 1.10.1. Classification of antibiotics and antivirals used in respiratory infections
  - 1.10.2. Mechanisms of Action of Antibiotic and Antivirals
  - 1.10.3. Resistance to Antibiotics and Antiviral
  - 1.10.4. Rational Use of Antibiotics and Antiviral

“ Do not hesitate and bet on a qualification at the forefront of Pharmacology with which you will be closer to scientific excellence”

05

# Methodology

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

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





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

## At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will be confronted with multiple simulated clinical cases based on real patients, in which they will have to investigate, establish hypotheses and ultimately, 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 will 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 power 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 grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. Learning is solidly translated into 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.





## Relearning Methodology

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

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 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 115,000 pharmacists have been trained with unprecedented success in all clinical specialties, regardless of the surgical load. This 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.

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

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.



### Video Techniques and Procedures

TECH introduces students to the latest techniques, to the latest educational advances, to the forefront of current pharmaceutical care procedures. All of this, first hand, and explained and detailed with precision to contribute to assimilation and a better 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.

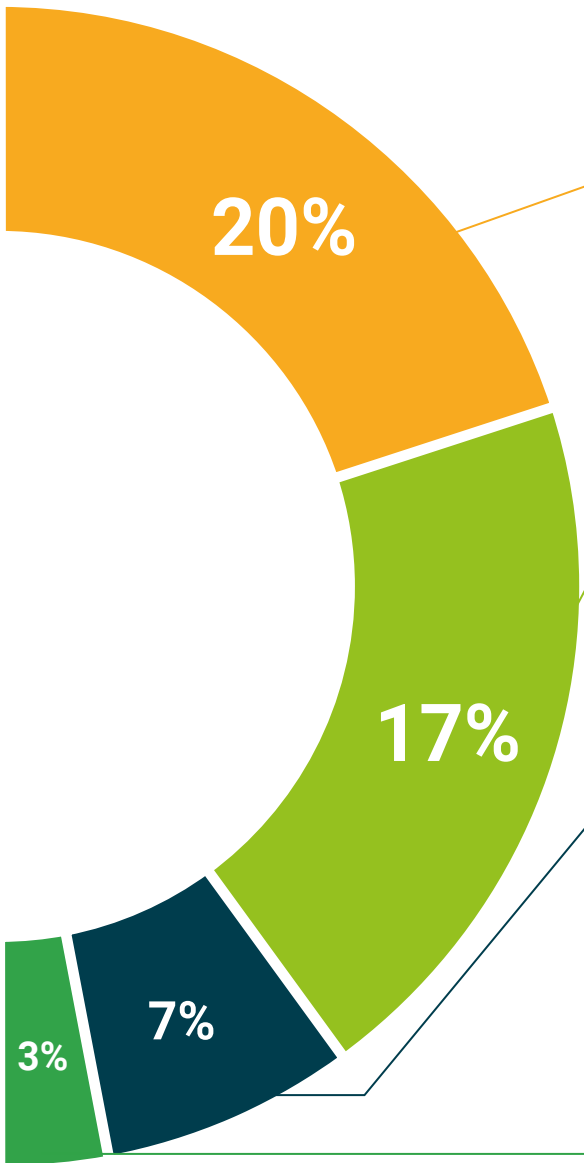
This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



### 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, we will present you with real case developments in which the expert will guide you through 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 on the usefulness of learning by observing experts. The system known as 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

This Postgraduate Certificate in Hospital Pharmacology of the Respiratory System 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 Hospital Pharmacology of the Respiratory System** contains the most complete and up-to-date scientific program on the market.

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

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

Title: **Postgraduate Certificate in Hospital Pharmacology of the Respiratory System**

Official N° of hours: **150 h.**



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

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guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present  
development language  
virtual classroom



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