

Postgraduate Certificate  
Hospital Pharmacology of  
the Respiratory System





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## Postgraduate Certificate Hospital Pharmacology of the Respiratory System

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Accreditation: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

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

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# 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.



*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. Therefore, 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. This is how the present Postgraduate Certificate in Hospital Pharmacology of the Respiratory System was created, a complete program that gathers 180 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
- ◆ The graphic, schematic and eminently practical contents with which it is conceived gather scientific and practical information on those disciplines that are indispensable 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 180 hours of diverse content: theoretical syllabus, case studies and multiple additional material to expand each section in a personalized way”

“ 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.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed 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 during the 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 to bring dynamism to the academic experience in combination with a complete and multidisciplinary syllabus.



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



### General Objectives

- ◆ 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



### Specific Objectives

- ◆ Delve into 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
- ◆ Delve into the definition, indication, pathophysiology, and 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



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

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.

“

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

## Management



### Mr. Maray Mateos, Iván

- Area Specialist in Hospital Pharmacy at Central University Hospital of Asturias
- Community Manager in Hospital Pharmacy Magazine of the Spanish Society of Hospital Pharmacy
- Pharmacist Specialist in Hospital Pharmacy at the Regional Hospital of Laredo
- Researcher in Project on the Effect of the Nanoencapsulation of Natural Products in Micellar Aggregates of the Department of Physical Chemistry of the University of Salamanca
- Master's Degree in Human Immunodeficiency Virus Infection, Rey Juan Carlos University
- Master's Degree in Pharmaceutical Oncology at the University of Valencia
- Master's Degree in Clinical Pharmacokinetics and Posological Individualization at the Miguel Hernández University
- Master's Degree in Bioinformatics and Biostatistics at the Open University of Catalonia
- Degree in Pharmacy at the University of Salamanca





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. Therefore, graduates who access it will be able to make use of 180 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 skills”*

**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. Pharmacological 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 TEN
  - 1.5.4. Role of Drugs and Infectious Agents in the Development of JSS and TEN
- 1.6. Rapid Induction and Intubation Sequence (RSII)
  - 1.6.1. Indications and Contraindications for RSII
  - 1.6.2. Complications and Risks Associated with RSII and its Management
  - 1.6.3. Techniques and Approaches for Rapid and Safe Intubation in Emergency Situations
  - 1.6.4. Monitoring and Assessment during RSII



- 1.7. Postintubation 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. Pharmacology of Mucolytics and Expectorants in Respiratory Diseases
  - 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. Assessment 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 Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.

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*TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”*

### The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.



*At TECH you will NOT have live classes (which you might not be able to attend)"*



### The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.



*TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want"*

### Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.



### Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

*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.*



### A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.

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*The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule”*

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

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of 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.



### The university methodology top-rated by its students

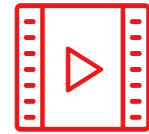
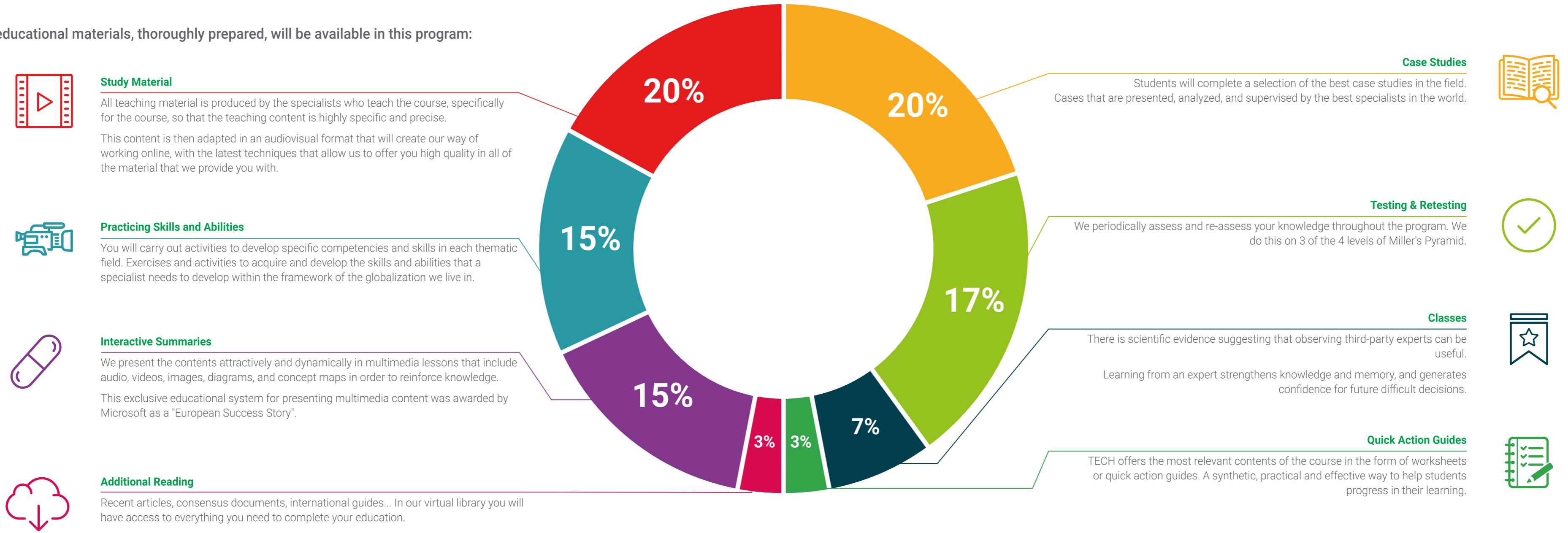
The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the quality of teaching, quality of materials, course structure and objectives is excellent. Not surprisingly, the institution became the best rated university by its students on the Trustpilot review platform, obtaining a 4.9 out of 5.

*Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.*

*You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.*

As such, the best educational materials, thoroughly prepared, will be available in this program:



**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.

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.



**Practicing Skills and Abilities**

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



**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 exclusive educational system for presenting multimedia content 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 education.

**Case Studies**

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.



**Testing & Retesting**

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.



**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 for 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 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 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 Certificate in Hospital Pharmacology of the Respiratory System** 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 Certificate in Hospital Pharmacology of the Respiratory System**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 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.

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



## Postgraduate Certificate Hospital Pharmacology of the Respiratory System

- » Modality: **online**
- » Duration: **6 weeks**
- » Certificate: **TECH Global University**
- » Accreditation: **6 ECTS**
- » Schedule: **at your own pace**
- » Exams: **online**

**Postgraduate Certificate**  
Hospital Pharmacology of  
the Respiratory System

