

Postgraduate Certificate  
Hospital Pharmacology of  
the Cardiovascular System





## Postgraduate Certificate Hospital Pharmacology of the Cardiovascular System

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

Website: [www.techtute.com/us/pharmacy/postgraduate-certificate/hospital-pharmacology-cardiovascular-system](http://www.techtute.com/us/pharmacy/postgraduate-certificate/hospital-pharmacology-cardiovascular-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

---

*p. 28*

# 01

# Introduction

Cardiovascular diseases are among the most frequent in the hospital setting. Fortunately, the repeated study of their causes and subsequent clinical consequences has allowed professionals in the pharmaceutical field to develop specialized treatments that are increasingly effective and efficient, while considerably reducing side effects. Based on this, TECH has developed a complete program that includes the latest advances in Hospital Pharmacology of the Cardiovascular System. This is a 100% online program designed to provide the graduates with the latest information on the best products used in each type of case, as well as taking into account the histology of the disease. All this through 180 hours of the best theoretical, practical and additional content.





“

*A review of the main diseases of the cardiovascular system will help you get up to date on their histology and on the most frequent epidemiology in order to have a broader and updated view”*



The catalog of diseases that directly affect the cardiovascular system is broad and diverse. From congenital causes, to hereditary and those caused by acquired factors, these pathologies cause millions of deaths each year. For this reason, the pharmacological field, in collaboration with medicine, has studied the histology of the heart and blood vessels, as well as the epidemiology of the most common diseases, in an attempt to create increasingly effective treatments for the prevention and care of patients affected by these diseases. Thanks to this, it has been possible to establish a series of therapies and drugs that have not only helped to improve the quality of life of patients, but have also saved incalculable lives around the world.

However, and fortunately, this is a field in constant evolution. For this reason, TECH has considered it necessary to design a program that includes the latest advances in this field, so that the Pharmacy professional can update his knowledge in a comfortable and effective way by accessing it. Thus arises the present Postgraduate Certificate in Hospital Pharmacology of the Cardiovascular System, an intensive, modern and dynamic program developed by experts of the highest level. During 180 hours, the graduates will be able to delve into the novelties associated with the therapeutics of ACS, arrhythmias, cardiac insufficiencies or multiple coronary diseases, among others, through an in-depth review of the main drugs for their treatment (antihypertensives, anticoagulants, inhibitors...).

All this through 180 hours of theoretical, practical and additional content, the latter presented in various formats: videos in detail, images, summaries, clinical cases, self-assessment exercises, research articles, news, diagrams... In addition, its 100% online mode will allow the graduates to connect to the academic experience from wherever and whenever they want, with the only requirement of having a device with Internet connection, whether it is a cell phone, tablet or computer.

This **Postgraduate Certificate in Hospital Pharmacology of the Cardiovascular 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 delve into the main Coronary Syndromes, as well as their most effective drugs through various multimedia resources”*

“

*A review of the main diseases of the cardiovascular system will help you get up to date on their histology and on the most frequent epidemiology in order to have a broader and updated view”*

The program's teaching staff includes professionals from sector who contribute their work experience to this educational 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 situations of professional practice that arise throughout the academic course. For this purpose, the students will be assisted by an innovative interactive video system created by renowned experts.

*You will be able to access the Virtual Campus from any device with Internet connection, without limits: from wherever and whenever you want.*

*The best program in the current academic market to know in detail the latest advances in Antihypertensives, their recommendations and warnings.*



# 02 Objectives

TECH and its team of experts in Pharmacology and Medicine have developed this Postgraduate Certificate with the aim of providing professionals in this field with the most complete and innovative information regarding the treatment of the main diseases affecting the Cardiovascular System. In order to achieve this goal, 180 hours of the best theoretical, practical and additional content will be made available to you, selected on the basis of the latest developments in the sector.





“

*The more ambitious your objectives are, the more you will be able to take advantage of this Postgraduate Certificate, do you dare?”*



## General Objectives

---

- ◆ Identify management of a wide variety of clinical situations, using available patient-specific information (e.g., age-related, risk factors, relevant acuity indices, prehospital providers)
- ◆ Develop therapeutic and monitoring plans based on medication-related problems, patient- and disease-specific information, and laboratory data





## Specific Objectives

---

- ◆ Delve into incidence, prehospital management, typical symptoms, rapid assessment and diagnosis, time-dependent pharmacology Acute Coronary Syndrome (ACS): i
- ◆ Evaluate, diagnose, delve into the initial management, time-dependent therapies for Heart Failure (HF)
- ◆ Delve into arrhythmias, initial management of tachycardia, stable and unstable tachycardia, cardiorespiratory arrest

“

*Class I antiarrhythmics, drugs for the treatment of coronary diseases, etc. You will find all the clinical novelties in this Postgraduate Certificate”*



03

# Course Management

The faculty of this Postgraduate Certificate in Hospital Pharmacology of the Cardiovascular System is made up of a team of experts from the pharmaceutical area, as it could not be otherwise. It is a group of top-level professionals with an excellent track record in the hospital setting. In addition, they are currently working, so they know in detail the latest advances in this field, as well as the recommendations and warnings to be taken into account when establishing the multiple existing treatments.





“

*The teaching team has selected multiple case studies so that you can work on perfecting your skills through the resolution of real situations in the hospital environment”*



## Management



### Mr. Ramos 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

TECH is a pioneer in the online academic environment in the use of the innovative and effective Relearning methodology, which consists mainly in the continuous reiteration of the most important concepts throughout the syllabus. In this way, the graduates attend a gradual and natural updating of their knowledge, without realizing it and without having to invest extra hours in memorizing. In addition, it is supported by dozens of hours of multimedia resources, which bring dynamism to the program and help to fix more effectively the information worked on.





“

*A program at the forefront of Pharmacology with which you will be able to improve your professional skills in a guaranteed way. Enroll now”*




## Module 1. Pharmacology of the Cardiovascular System

- 1.1. Acute Coronary Syndrome (ACS)
  - 1.1.1. ST NSTEMI/ACS Segment-Elevation ACS
  - 1.1.2. Non NSTEMI/ACS ST-Segment-Elevation in ACS
  - 1.1.3. Unstable Angina
- 1.2. Heart Failure
  - 1.2.1. Acute exacerbation of HF
  - 1.2.2. Moderate acute HF with water overload
  - 1.2.3. Acute hypertensive HF: acute pulmonary edema (PEA)
  - 1.2.4. Acute hypotensive HF: Cardiogenic Shock
  - 1.2.5. HF with increased systolic volume
  - 1.2.6. Acute HF and atrial fibrillation
  - 1.2.7. Acute HF and renal injury
  - 1.2.8. Hyperkalemia in acute HF
  - 1.2.9. HF of any type
- 1.3. Cardiac Arrhythmias
  - 1.3.1. Initial management of the patient with tachycardia
  - 1.3.2. Unstable tachycardia with a pulse
  - 1.3.3. Stable tachycardia
  - 1.3.4. Cardio-respiratory arrest (CRA)
- 1.4. Antihypertensives
  - 1.4.1. Angiotensin-converting enzyme inhibitors (ACEI)
  - 1.4.2. Angiotensin receptor blockers (ARBs)
  - 1.4.3. Diuretics
  - 1.4.4. Beta-blockers
- 1.5. Antiarrhythmics
  - 1.5.1. Class I
  - 1.5.2. Class II
  - 1.5.3. Class III
  - 1.5.4. Class IV





- 
- 1.6. Drugs for the treatment of coronary heart disease
    - 1.6.1. Platelet Aggregation Inhibitors
    - 1.6.2. Beta-Blockers
    - 1.6.3. Nitrates
    - 1.6.4. Angiotensin-converting enzyme inhibitors (ACEI)
  - 1.7. Anticoagulants
    - 1.7.1. Oral anticoagulants
    - 1.7.2. Vitamin K Antagonists
    - 1.7.3. Direct thrombin inhibitors
    - 1.7.4. Parenteral anticoagulants
  - 1.8. Drugs in the treatment of deep vein thrombosis and pulmonary embolism
    - 1.8.1. Pathophysiology of deep vein thrombosis
    - 1.8.2. Pharmacology of anticoagulants used in the treatment of DVT and PE
    - 1.8.3. Thrombolytic drugs
    - 1.8.4. Anticoagulant therapy in the acute and chronic management of DVT and PE
  - 1.9. Drugs in the Treatment of Angina Pectoris
    - 1.9.1. Pathophysiology of angina pectoris
    - 1.9.2. Fundamentals on Cardiovascular Pharmacology
    - 1.9.3. Classification of drugs for the treatment of Angina Pectoris
    - 1.9.4. Use of beta-blockers in the management of Angina Pectoris: Indications and Mechanisms of Action
  - 1.10. Drugs in the Treatment of Pulmonary Hypertension
    - 1.10.1. Pathophysiology of Pulmonary Hypertension
    - 1.10.2. Fundamentals on Cardiovascular Pharmacology
    - 1.10.3. Pharmacology of PDE5 inhibitors in the treatment of Pulmonary Hypertension
    - 1.10.4. Pharmacology of soluble guanylate cyclase stimulators in the treatment of pulmonary hypertension

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.



“

*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

The Postgraduate Certificate in Hospital Pharmacology of the Cardiovascular System guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.





“

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

This program will allow you to obtain your **Postgraduate Certificate in Hospital Pharmacology of the Cardiovascular 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.

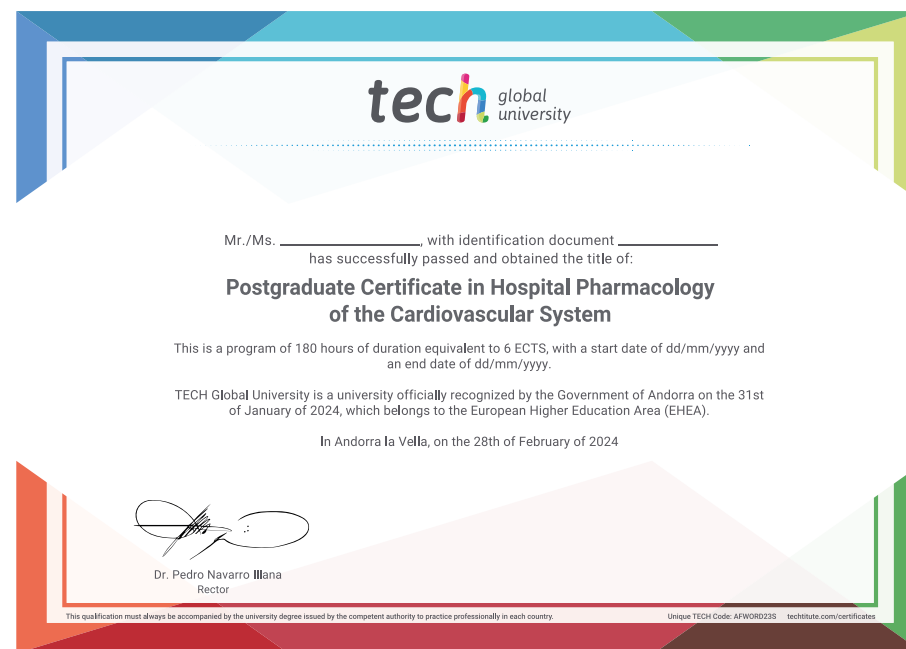
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Hospital Pharmacology of the Cardiovascular 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 language  
virtual classroom

**tech** global  
university

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

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

# Postgraduate Certificate

## Hospital Pharmacology of the Cardiovascular System

