

# Postgraduate Certificate Hospital Pharmacology in the Surgical and Polytraumatized Patient





## Postgraduate Certificate Hospital Pharmacology in the Surgical and Polytraumatized Patient

- » 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-surgical-polytraumatized-patient](http://www.techtute.com/us/pharmacy/postgraduate-certificate/hospital-pharmacology-surgical-polytraumatized-patient)

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# 01

# Introduction

Injuries are occurring with increasing frequency around the world and consume a huge proportion of the resources allocated to health programs. It is the third leading cause of death in all world statistics and the leading cause of death among those aged 1 to 40 years. For every patient who dies, thousands of people are left with sequelae. For this reason, being a field of study of such global relevance, this academic program has been opened, providing the pharmacist with unique material on the pharmacological and general management of traumatic brain injury, triage procedures, scales and classification of severity. All this with a 100% online pedagogical format and with a team of experienced teachers in Hospital Pharmacology.





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*Thanks to this Postgraduate Certificate you will contribute to a better management of trauma patients supported by innovative pharmacological techniques that only TECH offers you”*

A common characteristic in all patients with polytrauma is the presence of pain of different magnitudes, originating neuroendocrine and metabolic responses at a multisystemic level, aggravating the patient's general condition, therefore the treatment of pain during the initial phase of care of these patients has been included for several decades to reverse this process and prevent further decompensation. Therefore, multidisciplinary management is the key to success in the overall treatment of the polytraumatized patient. Trauma-associated pain occurs in three phases: the emergency phase, the healing phase and the rehabilitation phase.

In this sense, research in this field has continued with great progress, providing answers to multiple questions, confirming that professionals in this area will have to remain at the forefront in this field of health. In such a way that this Postgraduate Certificate will provide the professionals with current news about Hospital Pharmacology in the Surgical and Polytraumatized Patient and Triage in emergency and disaster situations.

The graduates will expand their competencies in important aspects related to the reversal of antithrombotic drugs: coagulopathy, severity of bleeding, resuscitation, monitoring of coagulopathy, reversal agents, antifibrinolytics. This is a program that has a specialized teaching team and a great background, supported by a high standard didactic material which offers dynamism and comfort with the online modality.

Also, TECH emphasizes comfort and excellence, that is why this program offers the most complete and high quality update, being a program that provides flexibility by only needing an electronic device with the ability to connect to the internet for easy access to the virtual platform from the comfort of the place where you are.

This **Postgraduate Certificate in Hospital Pharmacology in the Surgical and Polytraumatized Patient** 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 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



*You will broaden your skills such as anticoagulant reversal in specific clinical situations"*

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*A qualification that will provide you with comfort and flexibility without the need for a fixed schedule, and from the comfort of your own home”*

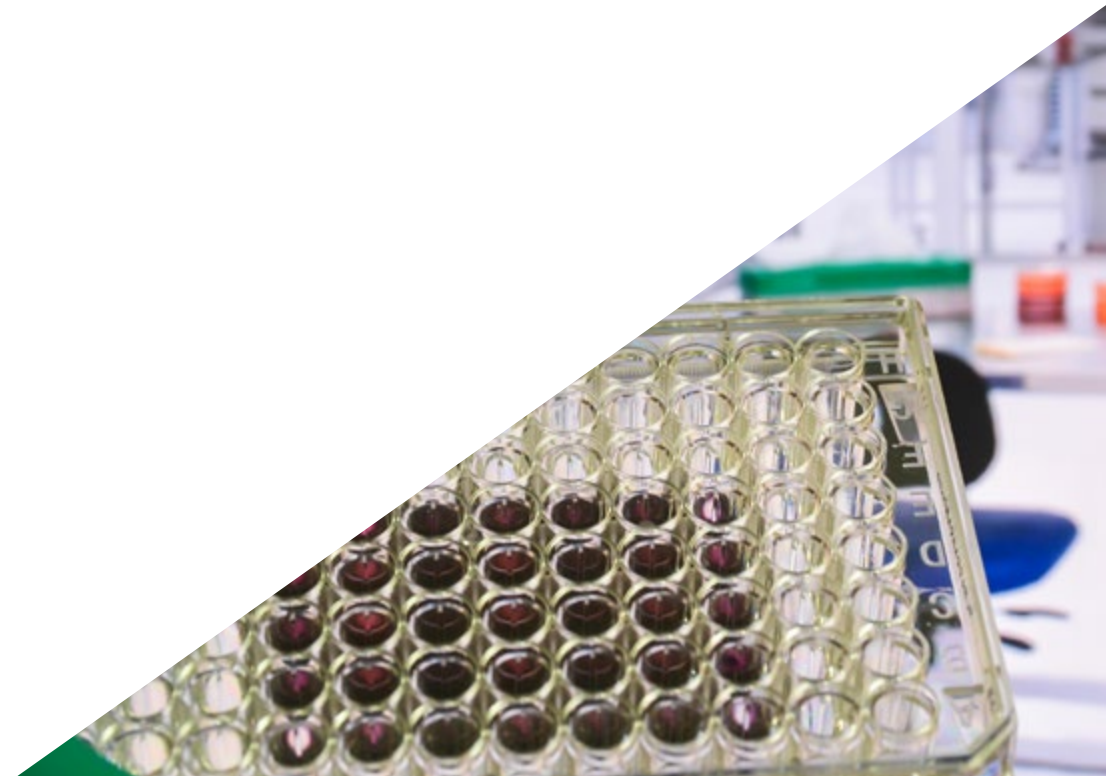
*TECH has a fully trained and experienced faculty in the field of Pharmacy and healthcare.*

*This program provides you with the most recent updates in Hospital Pharmacology.*

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 professional practice situations that are presented throughout the academic course. This will be done with the help of an innovative system of interactive videos made by renowned experts.



# 02 Objectives

This Postgraduate Certificate in Hospital Pharmacology in the Surgical and Polytraumatized Patient has been designed primarily to provide the professionals with the most recent updates in the field of Hospital Pharmacology. Therefore, TECH offers a variety of innovative technological tools, guaranteeing a successful completion of the program. Upon completion of this program, the students will have enhanced their knowledge in pharmacological options for the management of Acute Pain, Spinal Shock, Neurogenic Shock and Hypovolemic Shock.







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*TECH provides a number of innovative technological resources for the use and advancement of your academic program”*



## General Objectives

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- ◆ Identify the 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 issues, patient-specific and disease-specific information, and laboratory data
- ◆ Summarize strategies for the procurement, preparation, and administration of time-sensitive therapies
- ◆ Assess applicability and limitations of published data and reports to patient care
- ◆ Modify the treatment plan based on monitoring the patient's response to initial therapy





## Specific Objectives

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- ◆ Master the pharmacological and general management of traumatic brain injury, triage procedures, scales and severity classification
- ◆ Delve into the reversal of antithrombotic drugs: coagulopathy, severity of bleeding, resuscitation, monitoring of coagulopathy, reversal agents, antifibrinolytics
- ◆ Delineate the pharmacological options for the management of Acute Pain, Spinal Shock, Neurogenic Shock and Hypovolemic Shock
- ◆ Assess the different sedative agents that promote moderate sedation, their levels and recommendations



*In this Postgraduate Certificate you will master concepts such as Spinal Shock, Neurogenic Shock and Hypovolemic Shock”*



03

# Course Management

First level teaching is one of TECH's strengths, providing students with the didactic tools to successfully carry out the development of each of its programs. In this way, the graduates will have access to exclusive content created by a faculty specialized in Medical Science Liaison, Pharmacotherapeutic Follow-up of HIV/AIDS patients and the development and review of pharmaceutical care protocols. Their wide experience and deep knowledge will allow the professionals to solve doubts and answer questions that may arise during the course of the program.



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*TECH integrates a solid and highly qualified teaching team specialized in pharmacotherapeutic supervision of critically ill patients in Emergency Departments”*

## 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

## Professors

### D. Amor García, Miguel Ángel

- ♦ Hospital pharmacist at Infanta Cristina University Hospital
- ♦ Coordinator of the FarMIC Group of the Spanish Society of Hospital Pharmacy
- ♦ Member of the National Commission of Hospital Pharmacy, Ministry of Health of Spain
- ♦ Resident pharmacist at Gregorio Marañón University Hospital
- ♦ Hospital pharmacist at Salamanca Clinical Hospital
- ♦ Master's Degree in Medical Science Liaison at CESIF
- ♦ Degree in Pharmacy from the University of Salamanca



04

# Structure and Content

This program has been developed with respect to the most recent studies in the pharmaceutical area, establishing a study plan that provides a great content on Hospital Pharmacology in the Surgical and Polytraumatized Patient. This Postgraduate Certificate is focused on providing innovative content on the initial evaluation and emergency management of patients with open fractures. All this, by means of multiple multimedia tools that offer dynamism and a greater attractiveness to this university program.







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*A syllabus developed with advanced content on Hospital Pharmacology in the Surgical and Polytraumatized Patient”*

## Module 1. Pharmacology of the surgical and polytraumatized patient

- 1.1. Triage
  - 1.1.1. Triage in emergency and disaster situations:
  - 1.1.2. Triage systems used in the hospital setting and their characteristics
  - 1.1.3. Role of the pharmacist in the triage process and emergency care
  - 1.1.4. Pharmaceutical triage protocols in different clinical scenarios
- 1.2. Resuscitation in the polytraumatized patient (PPT)
  - 1.2.1. Hospital pharmacy in the PPT resuscitation team
  - 1.2.2. Pharmacology of resuscitation: drugs and therapies used in PPT
  - 1.2.3. Fluid therapy in the polytraumatized patient: types of solutions and considerations
  - 1.2.4. Analgesia and sedation in the polytraumatized patient
- 1.3. Cranioencephalic Trauma (CET)
  - 1.3.1. Classification and Severity of CET
  - 1.3.2. Pain management and sedation in patients with CET
  - 1.3.3. Treatment of Intracranial Hypertension
  - 1.3.4. Use of neuroprotective agents in CET
- 1.4. Reversal of anticoagulants
  - 1.4.1. Importance of anticoagulant reversal in specific clinical situations
  - 1.4.2. Risk-benefit assessment in anticoagulant reversal
  - 1.4.3. Reversal of unfractionated heparin (UFH) and low-molecular-weight heparin (LMWH)
  - 1.4.4. Antidotes and reversal agents for direct oral anticoagulants (OACDs)
- 1.5. Acute Pain Management
  - 1.5.1. Classification and scales for the evaluation of acute pain
  - 1.5.2. Principles and guidelines of pharmacological management of acute pain
  - 1.5.3. Multimodal Analgesia
  - 1.5.4. Intravenous, oral and transdermal analgesia
- 1.6. Spinal Shock
  - 1.6.1. Evaluation and classification of spinal shock
  - 1.6.2. Medications to stabilize blood pressure in spinal cord shock
  - 1.6.3. Pain Management in Patients with Spinal shock
  - 1.6.4. Neuroprotective agents in spinal shock





- 1.7. Hypovolemic Shock
  - 1.7.1. Evaluation and classification of Hypovolemic Shock
  - 1.7.2. Fluid therapy and volume replacement in hypovolemic shock
  - 1.7.3. Types of solutions and electrolytes used in volume replacement
  - 1.7.4. Use of vasoactive agents in the management of hypovolemic shock
- 1.8. Penetrating Trauma
  - 1.8.1. Evaluation and classification of patients with penetrating trauma
  - 1.8.2. Initial management and pharmacological stabilization of the trauma patient
  - 1.8.3. Use of hemostatic agents and pharmacologic hemostasis
  - 1.8.4. Antibiotherapy in penetrating trauma patients
- 1.9. Open Fractures
  - 1.9.1. Initial evaluation and emergency management of patients with open fractures
  - 1.9.2. Use of analgesia and sedation in patients with open fractures
  - 1.9.3. Adjuvant therapies in the acceleration of bone healing
  - 1.9.4. Use of analgesics and anti-inflammatory drugs in the management of pain in open fractures
- 1.10. Moderate sedation
  - 1.10.1. Indications and contraindications of moderate sedation
  - 1.10.2. Evaluation and selection of the appropriate level of sedation for each patient
  - 1.10.3. Management of anxiety and pain in procedures with moderate sedation
  - 1.10.4. Monitoring and patient safety during moderate sedation



*TECH brings you novel enhanced academic content on Antidotes and reversal agents for direct oral anticoagulants”*

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

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

The Postgraduate Certificate in Hospital Pharmacology in the Surgical and Polytraumatized Patient 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 program will allow you to obtain your **Postgraduate Certificate in Hospital Pharmacology in the Surgical and Polytraumatized Patient** 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.

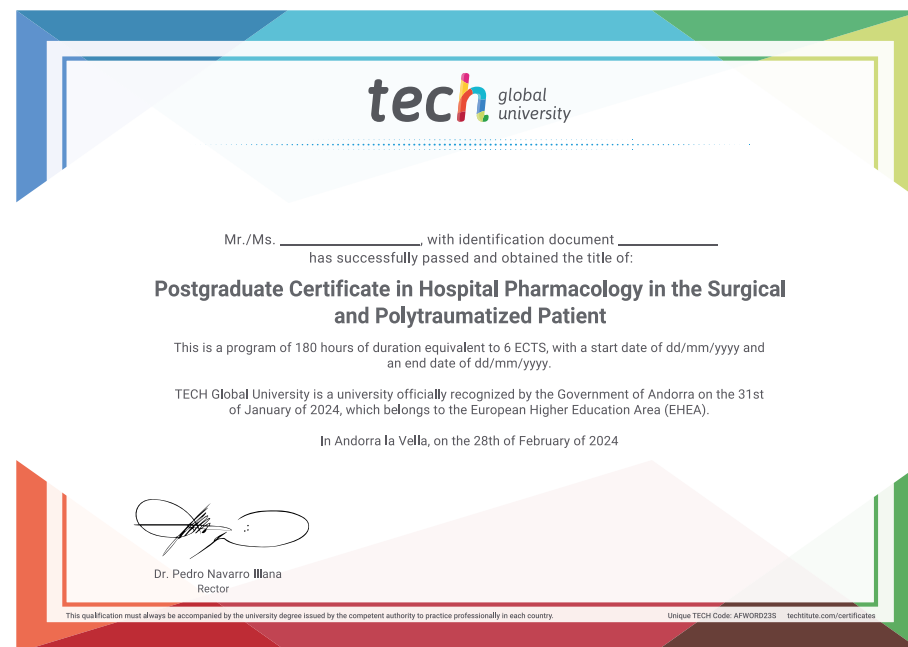
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Hospital Pharmacology in the Surgical and Polytraumatized Patient**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**





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in the Surgical and  
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# Postgraduate Certificate

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