

# Postgraduate Certificate

## Strategies for Blood Saving in the Postoperative and Critical Patient Settings



## Postgraduate Certificate

### Strategies for Blood Saving in the Postoperative and Critical Patient Settings

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

Website: [www.techtute.com/us/medicine/postgraduate-certificate/strategies-blood-saving-postoperative-critical-patient-settings](http://www.techtute.com/us/medicine/postgraduate-certificate/strategies-blood-saving-postoperative-critical-patient-settings)

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# 01

# Introduction

This program specifies in detail the particularities in the pathophysiology of anemia and the changes in the mechanism of hemostasis in the critically ill patient, in addition to addressing the importance of techniques to optimize anemia tolerance and decrease oxygen consumption requirements. It also considers how to reduce blood loss and the proper management of antithrombotic therapies. In all, the student delves into the recommended practices in the transfusion of blood components and blood saving strategies in response to the needs of the critically ill patient, from the Patient Blood Management approach and with the best professionals in the sector, a guarantee of TECH's quality seal.







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*Learn with the best specialists in hematology and  
hematotherapy the approach and care of the critically ill  
patient with the Patient Blood Management approach"*

The approach and patient care with the Patient Blood Management approach is dynamic and continuous among its three pillars. Therefore, this program will specify the particularities in the pathophysiology of anemia and the changes in the mechanism of hemostasis in the critical patient, as well as the importance of techniques to optimize tolerance to anemia and reduce oxygen consumption needs, as well as to reduce blood loss and the proper management of antithrombotic therapies.

Thus, the objective of this Postgraduate Certificate in Blood Saving Strategies in the Postoperative and Critical Patient Setting is to delve into best practices in the transfusion of blood components and blood saving strategies in response to the needs of the critical patient. Likewise, the recommended guidelines for the management of anticoagulation and thromboprophylaxis in these patients will be discussed in depth.

In addition, it is a 100% online Postgraduate Certificate, so the student has the ease of being able to take it comfortably, wherever and whenever he/she wants. All you need is a device with internet access to take your career one step further. A modality in line with the current times with all the guarantees to position the medical professional in a highly demanded field.

This **Postgraduate Certificate in Blood Saving Strategies in the Postoperative and Critical Patient Setting** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ The development of case studies presented by experts in Transfusion Medicine
- ♦ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional development
- ♦ Practical exercises where self-assessment can be used to improve learning
- ♦ With a special emphasis on evidence-based medicine and research methodologies in the field of transfusion medicine
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any device with an Internet connection



*This program specifies the particularities in the pathophysiology of anemia and changes in the mechanism of hemostasis in the critically ill patient, making it a unique specialization"*



*A Postgraduate Certificate designed in Problem Based Learning through which the student will solve different practical situations that will be presented in the course in an interactive way"*

*You will learn the latest techniques to optimize anemia tolerance and decrease oxygen consumption needs, as well as decrease blood loss and proper management of antithrombotic therapies.*

*You will delve into best practices in blood component transfusion and blood saving strategies to successfully meet the needs of the critically ill patient.*

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

Its 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 throughout the program. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts.





# 02 Objectives

The purpose of this Postgraduate Certificate is for the student to achieve the proposed objectives, so that he/she can expand his/her knowledge in Transfusion Medicine, specifically in the postoperative area and in the critical patient. Through the learning of quality content and an innovative methodology, the professional will learn about blood saving strategies in this clinical field, focused on the most vulnerable patients. To this end, a team of medical professionals has poured its knowledge and experience in the development of the points of this curriculum, which will drive the professional from a current approach, with full training for the achievement of their professional goal. Thus, the student is well on their way to excellence in their daily medical work in this field of Transfusion Medicine, contributing to saving blood in critical situations.





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*You will delve into the recommended guidelines for the management of anticoagulation and thromboprophylaxis in critically ill patients"*



## General Objectives

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- ♦ Know everything about the process of blood donation and blood components
- ♦ Understand hemovigilance as a transversal process involving the entire transfusion chain, from donor to patient





## Specific Objectives

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- ◆ Delve into best practices in blood component transfusion and blood-saving strategies that address the needs of the critically ill patient
- ◆ Acquire in-depth knowledge of the recommended guidelines for the management of anticoagulation and thromboprophylaxis in these patients

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*You will successfully execute best practices in blood component transfusion and blood saving strategies in response to the needs of the critically ill patient”*



03

# Course Management

TECH has prestigious experts in the medical field of hematology so that the student acquires a solid knowledge in the specialty of Transfusion Medicine in the postoperative and critical patient. Therefore, this Postgraduate Certificate has a highly qualified teaching staff, whose extensive experience in this medical field brings quality to the program, thus providing students with the best tools for the development of their skills during the course. In this way, the future professional has the guarantees required to specialize with the best and boost their academic career towards a specific sector that contributes to saving such an essential resource as blood, in addition to learning about other procedures that optimize this shortage.





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*You will learn from the best specialists in hematology and hemotherapy, who will guide you throughout the Postgraduate Certificate to help you thrive in the postoperative setting and implement blood saving strategies"*

## International Guest Director

Dr. Aaron Tobian is one of the great international references in the area of blood transfusion, being director of Transfusion Medicine at the Johns Hopkins Hospital. He is also Associate Director of Medical Affairs in the Pathology Area of the same clinical center.

In the academic field, Dr. Tobian has published more than 250 scientific articles related to Transfusion Medicine in the most prestigious journals, as a result of his global studies on diseases such as HIV.

In this sense, he also develops an important work as a member of several editorial boards. In addition, he is associate editor of the Journal of Clinical Apheresis, as well as being the editor-in-chief and founder of the Transfusion News portal, a reference in the dissemination of news on Transfusion Medicine.

All this, together with his teaching work, which he develops in prestigious centers, being professor of Pathology, Oncology and Epidemiology at the Johns Hopkins University School of Medicine and the Bloomberg School of Public Health.



## Dr. Tobian, Aaron

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- Director of Transfusion Medicine at The Johns Hopkins Hospital
- Associate Director of Clinical Affairs, Pathology Area, Johns Hopkins Hospital
- M.D. from Case Western Reserve University
- M.D., Case Western Reserve University
- Professor of Pathology, Medicine, Oncology and Epidemiology at The Johns Hopkins University School of Medicine
- Associate Editor of the Journal of Clinical Apheresis
- Editor-in-Chief and founding member of the website Transfusion News
- Editorial member of the journal Transfusion



*Thanks to TECH you will be able to learn with the best professionals in the world"*

## Management



### Dr. Alcaraz Rubio, Jesús

- ♦ Head of the Hematology Department at the 12 de Octubre Hospital (Madrid)
- ♦ Head of the Hematology Department at Mesa del Castillo Hospital, in Murcia
- ♦ Head of the Oncohematological Day Unit Hospital Viamed in Alcantarilla, Murcia
- ♦ Emergency Specialist at the Rafael Méndez Hospital, in Lorca, Murcia
- ♦ Head of the Hematology Department at the Hospital Virgen de la Caridad in Cartagena
- ♦ Member of Sermo's Medical Advisory Board
- ♦ Associate Professor of Emergency and Clinical Simulation at the Universidad Católica San Antonio in Murcia
- ♦ Degree in Medicine and Surgery from the University of Murcia
- ♦ Specialty in Hematology Hemotherapy





## Professors

### Dr. García Zamora, Cristina

- ◆ Specialist in General and Digestive System Surgery at Hospital Universitario Rafael Méndez, in Murcia
- ◆ Specialist in General and Digestive System Surgery at the Hospital Clínico Universitario Virgen de la Arrixaca, in Murcia
- ◆ PhD from the University of Murcia
- ◆ Degree in Medicine from the University of Murcia
- ◆ Specialty in General and Digestive Surgery at the Hospital Clínico Universitario Virgen de la Arrixaca, in Murcia
- ◆ Master's Degree in Anatomy applied to the Clinic by the University of Murcia
- ◆ Master's Degree in Bioethics from the Catholic University of San Antonio, in Murcia

### Dr. Reina Alcaina, Leandro

- ◆ Urology Specialist at Rafael Méndez University Hospital
- ◆ Urology Specialist at La Inmaculada Hospital
- ◆ Doctor of Medicine, Universidad Católica de San Antonio de Murcia
- ◆ Degree in Medicine and Surgery from the University of Murcia
- ◆ Specialty in Urology at Morales Meseguer University Hospital

### Ms. Sánchez López, Juana María

- ◆ Nurse of the Anesthesia and Resuscitation Unit of Hospital Rafael Méndez
- ◆ Degree in Nursing from the University of Murcia
- ◆ Master's Degree in Public Health
- ◆ Master's Degree in Occupational Risk Prevention

# 04

## Structure and Content

The structure of the contents of this Postgraduate Certificate has been designed based on the knowledge of Transfusion Medicine focused on the patient in the postoperative and critical patient, so that the professional expands and updates his/her knowledge in strategies for blood saving in this clinical field. Thus, the teaching team of this program has developed a syllabus which offers a broad perspective of the importance of this resource after the operating room, from the mechanisms of anemia or coagulopathy in the critical patient to the management of intracranial hemorrhage, among others. In this way, the student is provided with quality content that will guide him or her towards distinction within this medical field.







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*In this Postgraduate Certificate, you will learn the mechanisms of coagulopathy in the critically ill patient, especially disseminated intravascular coagulation"*

## Module 1. Strategies for Blood Saving in the Postoperative and Critically Ill Patient Setting

- 1.1. Mechanisms of Anemia in Critical Patients
  - 1.1.1. Etiopathogenesis
- 1.2. Mechanisms of Coagulopathy in Critical Patients
  - 1.2.1. Disseminated Intravascular Coagulation
- 1.3. Management of Anticoagulation and Antithrombotic Prophylaxis
  - 1.3.1. Thromboprophylaxis
  - 1.3.2. Anticoagulation
- 1.4. Early Diagnosis and Treatment of Infections
  - 1.4.1. Strategies for Early Diagnosis of Infections and Prevention of Sepsis
- 1.5. Optimization of Anemia Tolerance
  - 1.5.1. Use of Erythropoietic Agents in Critically Ill Patients
- 1.6. Transfusion Thresholds in Critically Ill Patients
  - 1.6.1. "Do-not-do" Practices in the Use of Blood Components
- 1.7. Controlled Hypotension
  - 1.7.1. Indications
  - 1.7.2. Physiological Response of the Organism
- 1.8. Gastrointestinal bleeding.
  - 1.8.1. Managing Hepatopathic Patients
  - 1.8.2. Gastrointestinal Bleeding Prophylaxis
- 1.9. Intracranial Hemorrhage Management
  - 1.9.1. Use of Prohemostatic Agents
- 1.10. Management and Indications of the Extracorporeal Membrane Oxygenation System (ECMO)
  - 1.10.1. Venoarterial ECMO
  - 1.10.2. Venovenous ECMO
  - 1.10.3. Transfusion Thresholds







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*You will master the handling and indications of the extracorporeal membrane oxygenation (ECMO) system as an expert"*

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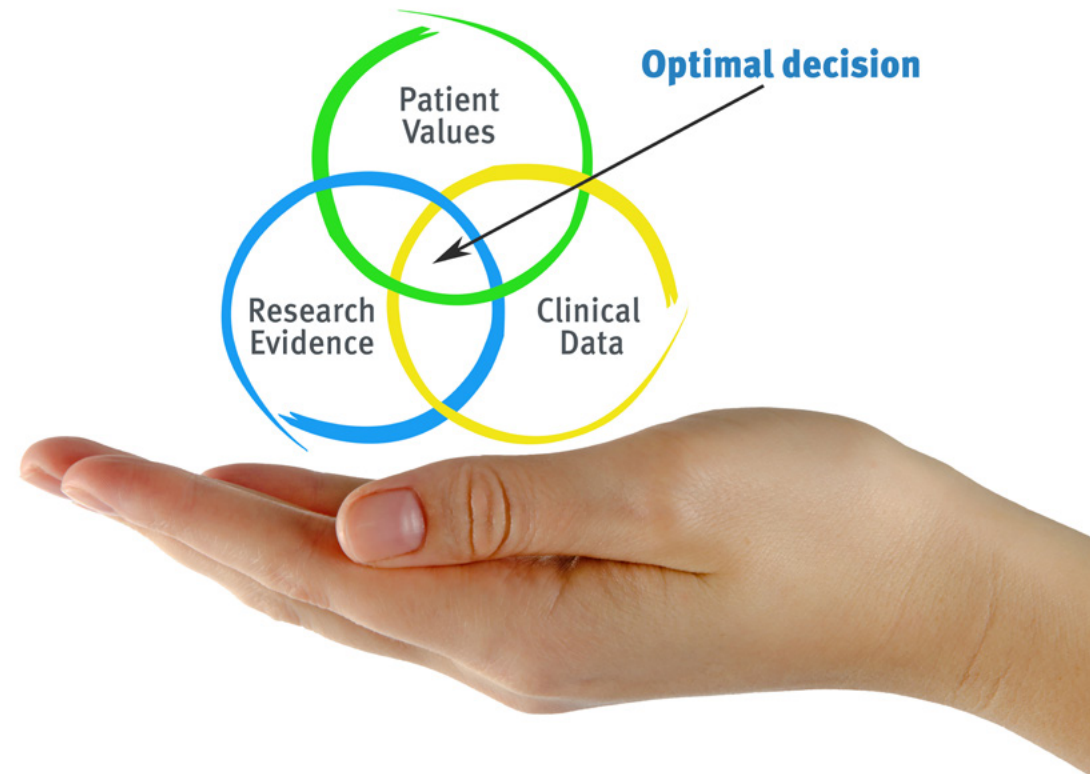
*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*



## At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

*With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.*



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician'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. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate 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.



## Relearning Methodology

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

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

*Professionals will learn through real cases and by resolving 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 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

*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 produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



#### Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.



#### Interactive Summaries

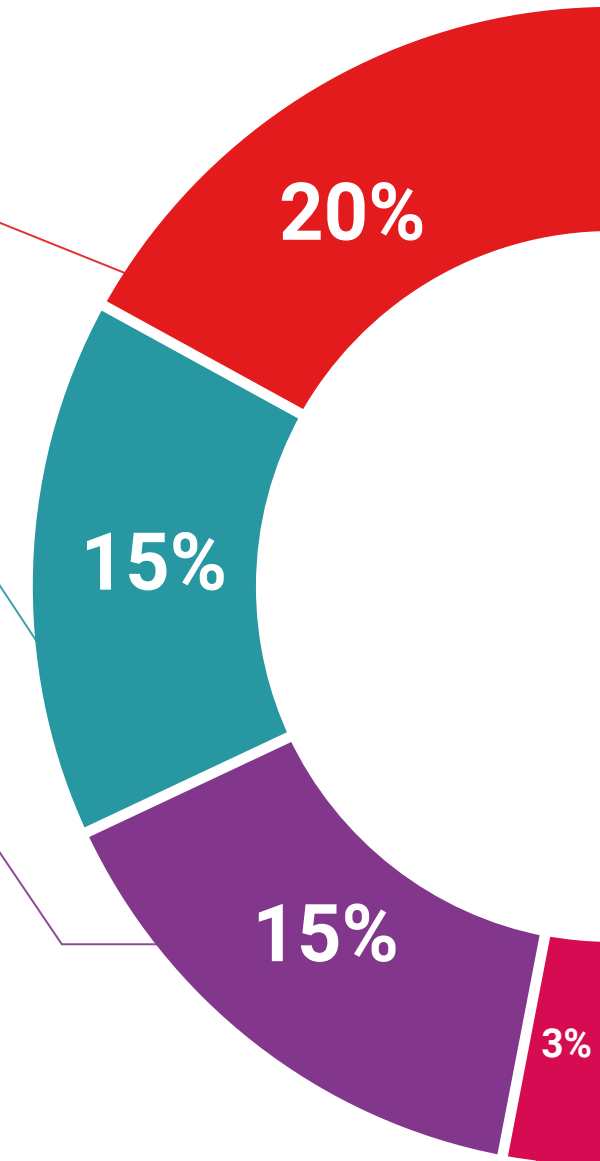
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

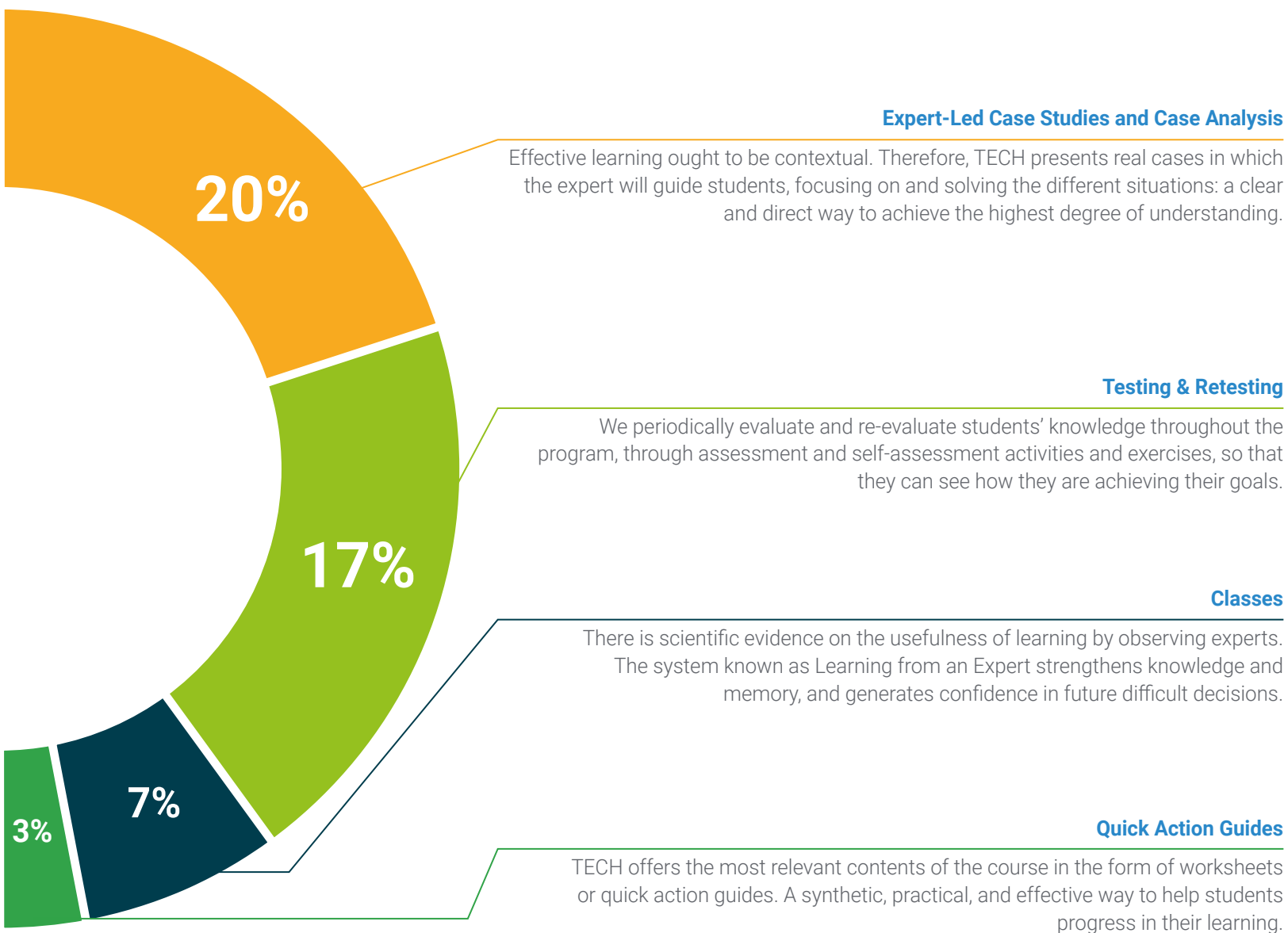
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





# 06 Certificate

The Postgraduate Certificate in Blood Saving Strategies in the Postoperative and Critical Patient Setting 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 Blood Saving Strategies in the Postoperative and Critical Patient Setting** 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.

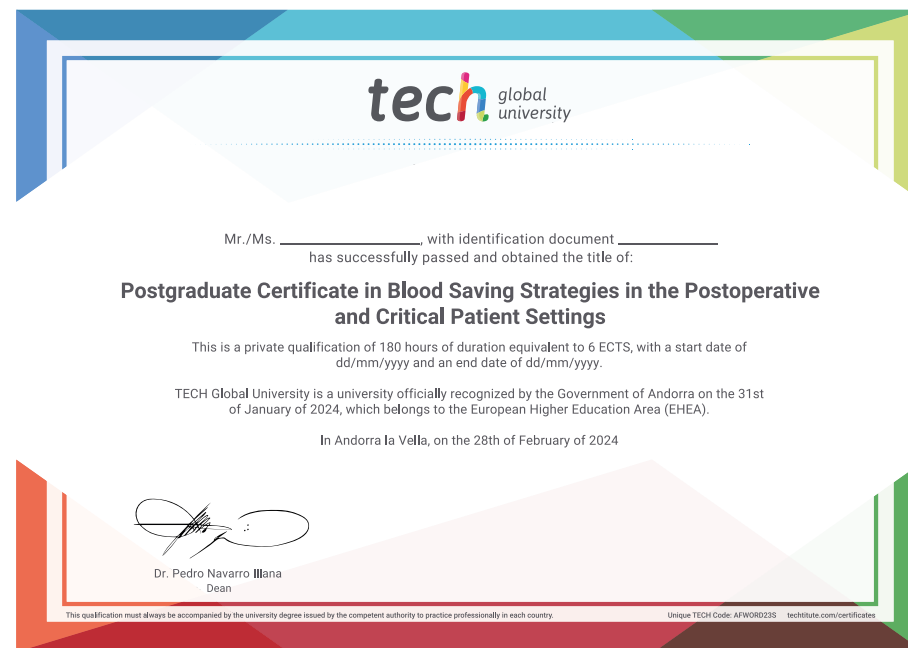
This **TECH Global University title**, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Blood Saving Strategies in the Postoperative and Critical Patient Settings**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**





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