

# Postgraduate Certificate

Digestive, Renal and Neurosurgical  
Emergencies in the PICU





## Postgraduate Certificate Digestive, Renal and Neurosurgical Emergencies in the PICU

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

Website: [www.techtute.com/us/medicine/postgraduate-certificate/digestive-renal-neurosurgical-emergencies-picu](http://www.techtute.com/us/medicine/postgraduate-certificate/digestive-renal-neurosurgical-emergencies-picu)

# Index

01

Introduction

---

*p. 4*

02

Objectives

---

*p. 8*

03

Course Management

---

*p. 12*

04

Structure and Content

---

*p. 18*

05

Methodology

---

*p. 22*

06

Certificate

---

*p. 30*

# 01

# Introduction

Digestive, Renal and Neurosurgical Emergencies In the PICU represent a significant challenge for healthcare professionals due to the complexity and severity of these conditions. Advances in monitoring and minimally invasive techniques have improved clinical outcomes, but the care burden remains high given the need for personalized and multidisciplinary intensive care. In this context, TECH has created a comprehensive program that operates online and offers great flexibility, accessible through an electronic device with an Internet connection. In addition, it is based on the innovative learning methodology known as Relearning, a pioneer in the university.



“

*With this 100% online Postgraduate Certificate, you will acquire specialized and up-to-date knowledge in critical areas of pediatric care, improving your ability to perform timely and effective interventions”*

In the PICU, Digestive, Renal and Neurosurgical Emergencies represent a significant challenge, due to their high complexity and the need for rapid and specialized interventions. Therefore, the implementation of evidence-based protocols and continuous staff specialization are essential to optimize the care of these critical patients.

In this sense, this Postgraduate Certificate, which will include a reflective assessment of blood product transfusions in the critically ill child. Therefore, physicians will evaluate when it is necessary to administer these products, considering both the potential benefits and risks. In addition, indications, contraindications and complications associated with transfusions will be discussed, as well as strategies to minimize risks and optimize clinical outcomes.

In addition, we will discuss Hemolytic-uremic syndrome (HUS), one of the main causes of acute renal failure in children, providing a detailed review of its pathophysiology, clinical presentation and management. HUS will also be differentiated from other conditions that may present with similar symptoms, using a systematic and evidence-based approach to differential diagnosis, crucial for implementing early and appropriate treatment.

Finally, updating knowledge on neuromonitoring of the critically ill child will be addressed, becoming familiar with the different techniques and technologies available, as well as their interpretation and clinical application. Likewise, the complexities of the postoperative management of Difficult Airway will be examined, highlighting strategies to anticipate and resolve complications, ensuring adequate ventilation.

In this scenario, TECH has developed a complete online program, customized to meet the individual needs of the student, eliminating obstacles such as the obligation to attend a physical location or to comply with pre-established schedules. Additionally, it is supported by the revolutionary Relearning methodology, which involves the repetition of essential concepts to guarantee an optimal and fluid understanding of the contents.

This **Postgraduate Certificate in Digestive, Renal and Neurosurgical Emergencies in the PICU** 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 Digestive, Renal and Neurosurgical Emergencies in the PICU
- ♦ 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 develop competencies in the thoughtful and ethical assessment of critical interventions, such as blood product transfusions, and in the application of advanced technologies for neuromonitoring"*



“

*You will address the clinical features, etiologies and treatment options for HUS, a serious condition that primarily affects young children and can lead to Acute Renal Failure. Enroll now!"*

The program's teaching staff includes professionals from the field who contribute their work experience to this educational 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.

*You will evaluate the indications, risks and benefits of blood transfusions and its components, applying clinical and ethical criteria in decision-making to improve outcomes in patients with severe anemia.*

*You will delve into the complications and strategies in the postoperative management of Difficult Airway, through the best didactic materials on the market, at the forefront of technology and education.*



# 02

# Objectives

This university program will seek to provide a deep understanding of the most prevalent and complex Digestive, Renal and Neurosurgical Pathologies in the pediatric setting, in addition to deepening in evidence-based diagnostic and treatment techniques. In addition, specific objectives will include the critical and reflective assessment of blood product transfusions, the analysis and management of Hemolytic-Uremic Syndrome (HUS), the updating of neuromonitoring methods, and the identification and approach to the difficulties in the postoperative management of Difficult Airway.





“

*The main objective of this academic program will be to qualify health professionals with specialized knowledge and advanced skills for the comprehensive management of critical emergencies in children"*



## General Objectives

---

- Learn to assess the nutritional status and needs of critically ill children
- Achieve adequate fluid management by detecting abnormal situations



*At the end of this Postgraduate Certificate, you will be equipped to make informed decisions and provide high quality, safe care to critically ill pediatric patients"*





## Specific Objectives

---

- Reflective assessment of blood product transfusions in the critical child
- Analyze the Uremic-hemolytic Syndrome and the differential diagnosis of the critically ill patient
- Update knowledge on Neuromonitoring of the critically ill child
- Determine the difficulties in the postoperative management of the difficult airway

03

# Course Management

The faculty members have been carefully selected for their vast clinical and academic experience in the management of critical emergencies in children, as well as for their in-depth knowledge of the latest research and advances in Gastroenterology, Nephrology and Pediatric Neurosurgery. Therefore, their essential commitment will lie in transmitting in an effective and comprehensible manner the theoretical and practical knowledge necessary for the comprehensive approach to these complex pathologies in an Intensive Care setting. In addition, they will foster the development of critical thinking and problem-solving skills.





“

*The expertise and commitment of the faculty will ensure the quality and relevance of the program content, as well as the success in specializing competent professionals to meet the challenges in the PICU"*

## Management



### Dr. Ocete Hita, Esther

- Head of the Pediatric Hospitalization Section of Virgen de las Nieves University Hospital of Granada
- FEA Pediatrics in the Pediatric Intensive Care Unit of Virgen de las Nieves University Hospital of Granada
- Associate Professor in the Faculty of Medicine at the University of Granada
- Specialist Pediatrician
- Doctor of Medicine
- Degree in Medicine



## Professors

### Dr. Quiralte Castillo, Joaquín

- ♦ FEA in the Pediatric Intensive Care Unit of the Virgen del Rocío University Hospital, Seville
- ♦ FEA in Pediatric Emergency Medicine and Pediatric and Neonatal Intensive Care at Juan Ramón Jiménez Hospital, Huelva
- ♦ FEA in Pediatric Intensive Care at the by the Hospital Insular- Maternal-Children's Hospital Complex, Las Palmas de Gran Canaria
- ♦ Advanced Neonatal and Pediatric CPR Instructor by the GERCPYNY
- ♦ Specialist in Pediatrics and its Specific Areas, subspecialty in Pediatric Intensive Care, by the Hospital Insular- Maternal-Children's Hospital Complex, Las Palmas de Gran Canaria
- ♦ Graduate of Medicine from the University of Seville

### Dr. Fernández Elías, Manuel

- ♦ FEA of Pediatrics in Critical Care and Emergency Care of the Virgen del Rocío Children's Hospital in Seville
- ♦ Pediatrician of EBAP in the Seville-North district
- ♦ Family Physician in the Seville-North district
- ♦ Accreditation in Pediatric Intensive Care by the Spanish Society of Pediatric Intensive Care (SECIP)
- ♦ Specialist in Pediatrics and Specific Areas
- ♦ Specialist in Family and Community Medicine
- ♦ Doctor of Medicine, University of Seville
- ♦ Graduate in Medicine and Surgery from the University of Seville

### Dr. Sánchez Valderrábanos, Elia

- ♦ Head of the Pediatric Intensive Care Department at the Virgen del Rocío University Hospital
- ♦ Area Specialist in Pediatric Intensive Care at the Virgen del Rocío University Hospital
- ♦ Doctor in Medicine and Surgery from the University of Seville
- ♦ Specialty in Pediatrics via MIR
- ♦ Graduate in Medicine and Surgery from the University of Seville

### Dr. Benítez Gómez, Isabel Lucía

- ♦ Pediatric Adjunct in the Pediatric Critical Care Unit of the H.U. Virgen del Rocío from Seville
- ♦ FEA in the Pediatric Intensive Care Unit of the Virgen del Rocío University Hospital in Seville
- ♦ Pediatrician in the P-ICU and Neonatal and Emergency Unit of the Hospital Nisa Aljarafe
- ♦ Assistant Pediatrician at the Sagrado Corazón Clinic
- ♦ Assistant Pediatrician in the P-ICU and Emergency Room at the Virgen del Rocío Children's Hospital in Seville
- ♦ Specialist in Pediatrics and its Specific Areas, subspecialty in Pediatric Intensive Care, by the Hospital Infantil Virgen del Rocío of Seville
- ♦ PhD in Medicine, University of Seville
- ♦ Graduate in Medicine and Surgery from the University of Seville

**Dr. Castro González, Laura**

- ♦ Pediatric Intensive Care Unit at the PICU of the Virgen del Rocío University Hospital, Seville
- ♦ FEA in Pediatrics in the Pediatric Intensive Care Section of the Virgen Macarena Laboratory University Hospital, Seville
- ♦ Medical Coordinator at Meki Catholic Pediatric Clinic, as part of the Project of the Pablo Horstmann Foundation, Ethiopia
- ♦ Rotation in Cardiovascular PICU at Juan P. Garrahan Hospital, Buenos Aires
- ♦ Rotation in Pediatric Cardiology at the Gregorio Marañón University Hospital, Madrid
- ♦ Specialist in Pediatrics and its Specific Areas by the Virgen del Rocío University Hospital, Seville
- ♦ Master's Degree in Pediatric Emergencies by the Catholic University of Valencia
- ♦ Professional Master's Degree in Diagnosis and Treatment in Pediatric Cardiology and Congenital Cardiopathies from CEU Cardenal Herrera University
- ♦ Expert in Basic Pediatric Infectious Diseases by the Rey Juan Carlos University
- ♦ Graduate in Medicine and Surgery from the University of Seville





**Dr. Ortiz Álvarez, Ana**

- ◆ FEA in Pediatrics in the PICU of the Virgen del Rocío Hospital, Seville
- ◆ Pediatrician in the Emergency Department of the Hispalense Institute of Pediatrics
- ◆ Specialist in Pediatrics and its Specific Areas, subspecialty in Pediatric Intensive Care, Virgen del Rocío University Hospital, Seville
- ◆ Master's Degree in Pediatric Emergencies and Emergencies by the International University of Andalusia (UNIA)
- ◆ Master's Degree in Anesthesiology, Pain Management and Pediatric Perioperative Intensive Care by the International University of La Rioja
- ◆ Degree in Medicine from the University of Seville

**Dr. Quesada Ortega, Úrsula**

- ◆ FEA in Pediatrics in the PICU of the Virgen del Rocío Hospital, Seville
- ◆ FEA in Pediatrics in the PICU of the Hospital La Paz, Madrid
- ◆ Specialist in Pediatric Intensive Care from the Virgen del Rocío Hospital, Seville
- ◆ Specialist in Pediatrics and its Specific Areas by the La Paz Hospital, Madrid
- ◆ Master's Degree in Palliative Care Treatments from the University of La Rioja
- ◆ Degree in Medicine from the University of Granada

# 04

## Structure and Content

This academic program will include a comprehensive review of Digestive Emergencies, as well as the detailed analysis of the Uremic-Hemolytic Syndrome and its differential diagnosis in the context of the critically ill patient. In addition, Renal Emergencies and renal replacement therapy strategies adapted to the pediatric population will be discussed in depth. On the other hand, neuromonitoring for a continuous and accurate assessment of the neurological status of the critically ill patient will be examined. Likewise, difficulties in the postoperative management of the Difficult Airway will be addressed, focusing on advanced techniques and specific protocols.





“

*The contents of this Postgraduate Certificate will address a wide range of topics crucial to the effective management of critically ill pediatric patients. With all the TECH quality guarantees!”*

## Module 1. Digestive, Renal, and Neurosurgical Emergencies in the Pediatric Intensive Care Unit

- 1.1. Assessment and Monitoring of the Nutritional Situation and Calculation of Nutritional Needs Enteral and Parenteral Nutrition in the Critically Ill Child
  - 1.1.1. Nutritional Status and Calculation of Nutritional Needs
  - 1.1.2. Enteral Nutrition
  - 1.1.3. Parenteral Nutrition
- 1.2. Major Burns and their Management in the ICU
  - 1.2.1. Diagnosis of % scq
  - 1.2.2. Calculation of Water Needs
  - 1.2.3. Need for Mechanical Ventilation in Large Burn Injuries
- 1.3. Diabetes Insipidus, Syndrome of Inadequate Antidiuretic Hormone Secretion and Brain Salt Loss Syndrome
  - 1.3.1. Adequate Fluid Management
  - 1.3.2. Differential
  - 1.3.3. Specific Treatment of Diabetes Insipidus, Syndrome of Inadequate Antidiuretic Hormone Secretion and Brain Salt Loss Syndrome.
- 1.4. Pain Management in Pediatrics
  - 1.4.1. Assessment of Pain in the Critically Ill Child Pain Scales
  - 1.4.2. Pain 5th Constant in Pediatrics
  - 1.4.3. Zero Pain Protocol
- 1.5. Thrombotic Microangiopathy Uremic-Hemolytic Syndrome
  - 1.5.1. Thrombi in Children
  - 1.5.2. Small Vessel Thrombi
  - 1.5.3. Management of Uremic-haemolytic Syndrome in Critically Ill Children
- 1.6. Post Renal Transplant Critical Care
  - 1.6.1. Indications for TX in Children
  - 1.6.2. Evaluation of the Recipient
  - 1.6.3. Management of Renal TX in PICU
- 1.7. Hemorrhage and Transfusion Management
  - 1.7.1. Critical Bleeding
  - 1.7.2. Patient Assessment
  - 1.7.3. Transfusion Management in the Critical Child





- 1.8. Childhood Stroke
  - 1.8.1. Diagnosis of Stroke in Children
  - 1.8.2. Multidisciplinary Assessment of the Child with Clinical Suspicion of Stroke
  - 1.8.3. Treatment of Stroke
- 1.9. Neuromonitoring in Critically Ill Patients
  - 1.9.1. Neuromonitoring in Critical Patients
  - 1.9.2. Available Resources
  - 1.9.3. Assessment of Critical Neuromonitoring
- 1.10. Difficult Airway Postoperative Period
  - 1.10.1. Indications for EC in VAD
  - 1.10.2. VAD Coagulation
  - 1.10.3. Postoperative Management of VAD

“ *This comprehensive, multidisciplinary approach will prepare you to meet the challenges of the PICU with up-to-date knowledge and practical skills, supported by the revolutionary Relearning methodology*”



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 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. 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, trying to recreate the real conditions in the physician'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. 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

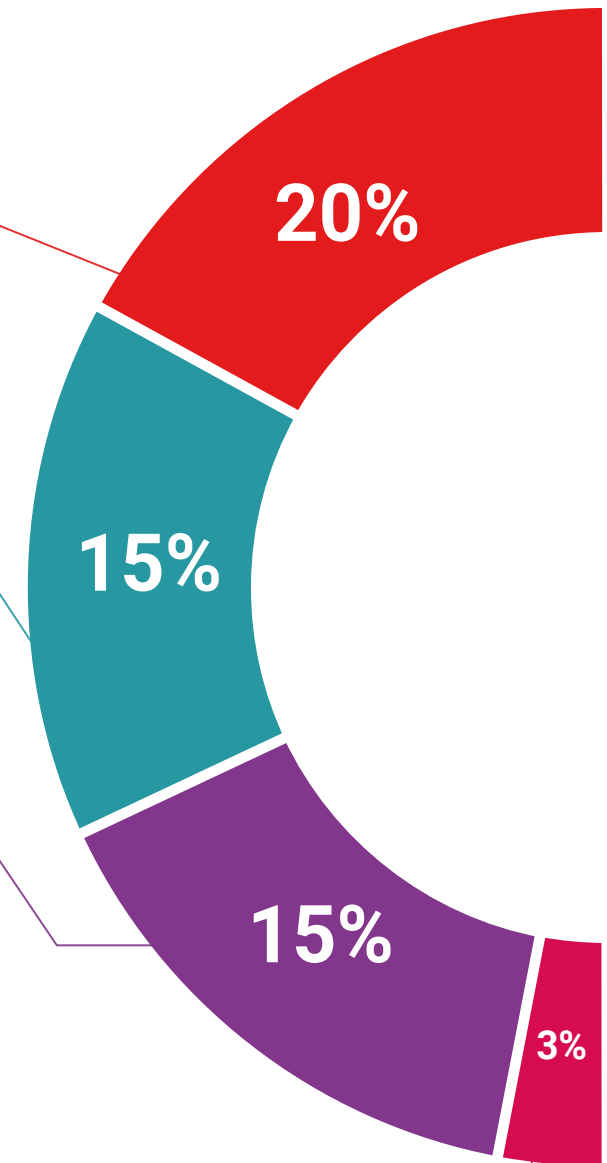
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

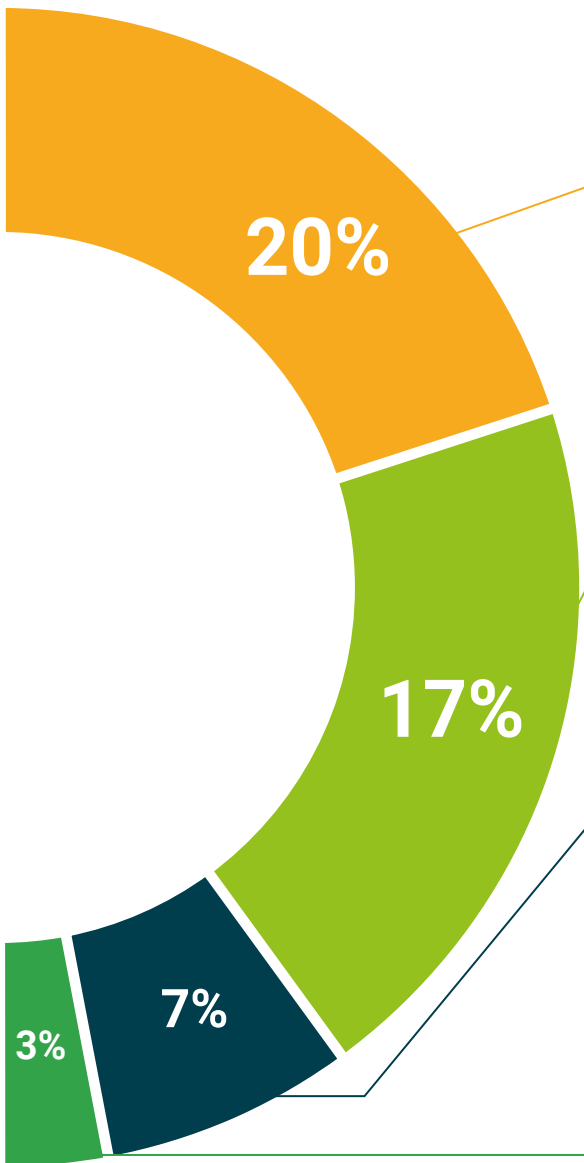
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### 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.





**Expert-Led Case Studies and Case Analysis**

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, 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 Digestive, Renal and Neurosurgical Emergencies in the PICU guarantees, in addition to the most accurate 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 private qualification will allow you to obtain a **Postgraduate Certificate in Digestive, Renal and Neurosurgical Emergencies in the PICU** 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 Digestive, Renal and Neurosurgical Emergencies in the PICU**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



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



## Postgraduate Certificate

Digestive, Renal and Neurosurgical  
Emergencies in the PICU

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

# Postgraduate Certificate

Digestive, Renal and Neurosurgical  
Emergencies in the PICU

