

Postgraduate Certificate

Toxicology and Endocrinology in the PICU





Postgraduate Certificate Toxicology and Endocrinology 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/toxicology-endocrinology-picu

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

In the PICU, the intersection between Toxicology and Endocrinology plays a crucial role in the management of pediatric patients with Acute Poisoning. With the increase in cases related to exposure to toxic substances, from household chemicals to recreational drugs, endocrinologists and toxicologists are working closely together to assess and manage adverse endocrine effects. In addition, new treatment strategies are being developed that take into account the unique physiology of pediatric patients. In this context, TECH has developed a comprehensive online program, which provides great flexibility and can be accessed through an Internet-enabled device. It is also based on the innovative Relearning learning methodology.





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Thanks to this 100% online Postgraduate Certificate, you will acquire in-depth knowledge and practical skills on the identification and management of poisoning and endocrinological disorders in children"

With increased exposure to toxic substances in the environment, from household chemicals to medications, Pediatric specialists face unique challenges in the identification and management of Acute and Chronic Poisoning. In addition, understanding how these substances can affect the developing Endocrine System in children is critical to ensure effective treatment and minimize long-term sequelae.

This Postgraduate Certificate was born, thanks to which physicians will recognize the common signs and symptoms of exposure to toxins and poisoning in children, as well as how to manage acute complications of endocrinological disorders. In addition, emphasis will be placed on the use of laboratory and diagnostic techniques to evaluate and monitor both poisoning and endocrinological disorders, allowing for a comprehensive approach to patient care.

It will also provide the tools to coordinate care with pharmacists and toxicologists, therefore optimizing detoxification therapy and the use of antidotes in emergency situations. Professionals will also be specialized to identify and treat endocrinological emergencies, such as Hyperglycemic Crisis and Adrenal Insufficiency, in a timely manner, therefore improving patient care and outcomes.

Finally, a collaborative, team-based approach will be promoted, recognizing that optimal patient care in toxicologic and endocrinologic emergencies requires effective coordination among various health care professionals. In this regard, this collaborative approach will ensure comprehensive and personalized care, which significantly improves patient outcomes in the PICU.

In this scenario, TECH has created a comprehensive online program, designed to adapt to the individual needs of students, eliminating the need to attend a physical location or follow fixed schedules. In addition, it is supported by the innovative Relearning methodology, which is based on the repetition of key concepts to ensure an optimal and natural understanding of the contents.

This **Postgraduate Certificate in Toxicology and Endocrinology 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 Toxicology and Endocrinology 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 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 effectively coordinate care with other specialists, such as pharmacists and toxicologists, to ensure a comprehensive and optimized approach for each patient. With all the TECH quality guarantees!"

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You will address ethical and legal aspects in the management of toxicological and endocrinological cases in children, preparing you to face ethical dilemmas and follow practices based on ethical and legal standards”

The program’s teaching staff includes professionals from the sector who contribute their work experience to this specializing 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 recognize the common symptoms of toxin exposure and poisoning in children, as well as apply laboratory and diagnostic techniques to evaluate and monitor both poisoning and endocrine disorders.

You will participate in research studies and case analysis to advance knowledge and practice in pediatric toxicology and endocrinology through an extensive library of multimedia resources.



02 Objectives

This undergraduate program aims to specialize professionals to identify the signs and symptoms of toxin exposure and poisoning in children, as well as address acute complications arising from endocrine disorders. In addition, physicians will be equipped with advanced skills in the use of laboratory and diagnostic techniques to assess and monitor these conditions, enabling them to provide optimal and personalized care to critically ill pediatric patients.



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The objectives will be based on providing health care professionals with comprehensive and specialized knowledge in the management of pediatric patients with poisoning and endocrinological disorders"



General Objectives

- ◆ Develop expertise in pediatric endocrinologic emergencies, such as Diabetic Ketoacidosis and Adrenal Crisis



This Postgraduate Certificate will foster research and innovation, preparing graduates to meet clinical challenges and contribute to the continued advancement of medical care in the PICU"





Specific Objectives

- ◆ Identify common signs and symptoms of exposure to toxins and poisoning in children
- ◆ Manage acute complications of Endocrinologic Disorders
- ◆ Utilize laboratory and diagnostic techniques to evaluate and monitor Poisoning and Endocrine Disorders
- ◆ Coordinate care with pharmacists and toxicologists to optimize detoxification therapy and use of antidotes
- ◆ Identify and timely treat endocrinologic emergencies such as Hyperglycemic Crisis and Adrenal Insufficiency
- ◆ Participate in research studies and case analyses to advance knowledge and practice in pediatric toxicology and endocrinology
- ◆ Address ethical and legal issues in the management of toxicologic and endocrinologic cases in children
- ◆ Promote a collaborative, team-based approach to improve patient outcomes in emergency toxicologic and endocrinologic emergencies

03

Course Management

The faculty are highly qualified and experienced experts in their respective fields. Combining solid academic specialization with extensive clinical experience, these professionals will provide graduates with quality and relevant teaching. Coming from diverse disciplines, they will also bring an interdisciplinary perspective, enriching students' learning and understanding. In addition to transmitting theoretical knowledge, lecturers also share their practical experiences and real clinical cases, helping participants to apply the concepts learned in real clinical situations.





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Their dedication to academic excellence and their commitment to the professional development of the graduates make the teachers a fundamental part of the success of the Postgraduate Certificate"

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. Calvo Bonachera, María Dolores

- ♦ Head of the Critical Care and Emergency Department at the Princesa Leonor Maternity Hospital, Almeria
- ♦ FEA with position in the Torrecárdenas Hospital Complex
- ♦ FEA at the Hospital de Poniente
- ♦ Pediatric Specialist Physician
- ♦ Accredited by the SAS at Expert Level
- ♦ Degree in Medicine from the University of Granada

Dr. Ruiz Frías, Ángela

- ♦ Pediatric Intensive Care Unit at the PICU of the Virgen del Rocío University Hospital, Seville
- ♦ Area Specialist in Pediatrics with practice in Neonatology, Emergency and Neonatal Intensive Care at Hospital Quirón Málaga
- ♦ Specialist in Pediatrics and specific areas at Hospital Torrecárdenas
- ♦ Master's Degree in Genetic, nutritional and environmental determinants in growth and development from the University of Granada
- ♦ Degree in Medicine from the University of Malaga

Dr. Ortiz Pérez, María

- ♦ FEA in Pediatrics in the PICU of the Torrecádenas Hospital, Almería
- ♦ FEA in Pediatrics at the Hospital de Poniente, Almería
- ♦ Pediatrician at the Hospital Torrecádenas, Almería
- ♦ Coordinator of the Refresher Course in the Management of Pediatric Emergencies at Hospital Torrecádenas, Almería Accredited by the ACSA
- ♦ Critical Patient Transport at Hospital General Yagüe, Burgos
- ♦ Rotation in the PICU of the Vall d'Hebron Maternal Hospital, Barcelona
- ♦ Rotation in the Pediatric and Neonatal ICU, Hospital Torrecádenas, Almería
- ♦ Specialist in Pediatrics and its Specific Areas by the Torrecádenas Hospital, Almería
- ♦ Degree in Medicine and Surgery from the University of Granada
- ♦ Member of: Spanish society of Pediatric Intensive Care, Spanish Society of Pediatrics, Pediatric Society of Pediatrics of Eastern Andalusia

Dr. Maldonado Martín, María Belén

- ♦ Faculty Specialist in Pediatrics at the Torrecádenas University Hospital
- ♦ Expert in Continuous Extrarenal Depuration in the critical child by the Hospital Sant Joan de Deu
- ♦ Expert in Advanced Life Support in Pediatric Trauma by the Hospital Sant Joan de Deu
- ♦ Expert in Basic and Advanced Pediatric and Neonatal Mechanical Ventilation
- ♦ Medical Specialist in Pediatrics and its specific areas by the Torrecádenas University Hospital
- ♦ Graduate in Medicine from the University of Cadiz

Dr. Luzón Avivar, Alba

- ♦ FEA in Pediatrics at the University Hospital of Torrecádenas of Almería
- ♦ International Collaborator at Pablo Horstmann Pediatric Hospital, Kenya
- ♦ Rotation in the Pediatric Intensive Care Unit of the Hospital Virgen del Rocío, Seville
- ♦ Rotation in the Treatments Intensive Care Unit of the Hospital Vall d'Hebron, Barcelona
- ♦ Specialist in Pediatrics and its specific areas at the Torrecádenas University Hospital, Almería
- ♦ Master's Degree in Pediatric Emergencies from the CEU - Cardenal Herrera University
- ♦ University Expert in Critical Pediatric Patient by the CEU-Cardenal Herrera University
- ♦ University Expert in Pediatric Trauma by the CEU-Cardenal Herrera University
- ♦ University Expert in Pediatric Emergencies for Specialized Care Physicians by CEU-Cardenal Herrera University
- ♦ University Expert in Pediatric Urgent Care by CEU-Cardenal Herrera University
- ♦ Graduate in Medicine from the University of Granada

04

Structure and Content

From identifying signs and symptoms of toxin exposure and poisoning in children, to the management of acute complications of endocrine disorders, the program will cover topics crucial to comprehensive patient care in this setting. In addition, laboratory and diagnostic techniques will be used to evaluate and monitor poisoning and endocrine disorders, as well as strategies for coordinating care with other health care professionals, such as pharmacists and toxicologists.





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You will cover endocrinological emergencies, such as Hyperglycemic Crisis and Adrenal Insufficiency, participating in research studies to advance this crucial field"

Module 1. Toxicology and Endocrinology in the Pediatric Intensive Care Unit

- 1.1. Diabetic Ketoacidosis
 - 1.1.1. Underlying Causes of Diabetic Ketoacidosis
 - 1.1.2. Diagnosis of Diabetic Ketoacidosis by Interpretation of Clinical Symptoms and Laboratory Results
 - 1.1.3. Effective Treatment Strategies: Management and Prevention of Diabetic Ketoacidosis in Patients with Diabetes
- 1.2. Electrical Trauma Injuries
 - 1.2.1. Types of Electrical Trauma Injuries according to Mechanism of Action and Severity
 - 1.2.2. Immediate and Long-term Signs and Symptoms Associated with Electrical Trauma Injuries
 - 1.2.3. First Aid and Medical Treatment Protocols for Victims of Electrical Trauma
- 1.3. Alterations in Water-electrolyte Metabolism
 - 1.3.1. Functions of the Main Electrolytes in the Body Importance for Water-electrolyte Balance
 - 1.3.2. Common Causes and Clinical Signs of Disturbances in Water-Electrolyte Balance
 - 1.3.3. Management of Disturbances in Water-electrolyte Metabolism by Appropriate Therapeutic Interventions
- 1.4. Acute Adrenal Insufficiency
 - 1.4.1. Risk Factors and Precipitating Causes of Acute Adrenal Insufficiency
 - 1.4.2. Characteristic Clinical Signs and Symptoms of Acute Adrenal Insufficiency for Early Diagnosis
 - 1.4.3. Urgent Management Strategies for the Treatment of Acute Adrenal Insufficiency: Cortisol Replenishment
- 1.5. Disorders of the Thyroid Gland
 - 1.5.1. Disorders of the Thyroid Gland, Hypothyroidism and Hyperthyroidism: Clinical Features and Laboratory Findings
 - 1.5.2. Clinical Implications of Autoimmune Thyroid Disorders: Disease and Hashimoto's Thyroiditis on the Physiology and Well-being of the Patient
 - 1.5.3. Diagnostic and Therapeutic Approach to Thyroid Disorders: Medical, Surgical Treatment and the Management of Complications





- 1.6. Inhalation Injuries
 - 1.6.1. Types of Inhalation Injuries: Thermal, Chemical and Smoke Inhalation Injuries and their Mechanisms of Injury
 - 1.6.2. Immediate and Long-term Signs and Symptoms Associated with Inhalation Injuries: Early and Accurate Diagnosis
 - 1.6.3. Treatment and Management Strategies for Patients with Inhalation Injuries: Respiratory Support and Specific Therapies for Toxic Agents
- 1.7. Inherited Metabolic Diseases
 - 1.7.1. Principles of Genetics and Inheritance of Metabolic Diseases with Identification of Commonly Affected Metabolic Pathways
 - 1.7.2. Clinical Signs and Symptoms of the Inherited Metabolic Diseases: Early Diagnosis
 - 1.7.3. Management Strategies and Specific Treatment for Inherited Metabolic Diseases: Special Diets, Enzyme Supplementation and Gene Therapies
- 1.8. Antidotes and their Use in Pediatrics
 - 1.8.1. Specific Antidotes in Pediatrics for the most Common Poisoning: Mechanisms of Action
 - 1.8.2. Indications, Dosage and Routes of Administration of Antidotes in the Management of Acute Poisoning in Children
 - 1.8.3. Protocols of Action in Emergency Situations with the Use of Antidotes: Pharmacokinetic and Pharmacodynamic Particularities in the Pediatric Population
- 1.9. Carbon Monoxide Poisoning
 - 1.9.1. Pathophysiology of Carbon Monoxide Poisoning: how it Affects the Body Focusing on its High Affinity for Hemoglobin and the Resulting Systemic Effects
 - 1.9.2. Clinical Signs and Symptoms of Carbon Monoxide Poisoning: Acute and Potential Long-term Neurological and Cardiovascular Health Effects
 - 1.9.3. Treatment Strategies for Carbon Monoxide Poisoning: Administration of 100% Oxygen and Hyperbaric Therapy in Appropriate Cases
- 1.10. Acute Poisoning
 - 1.10.1. Toxic Agents Responsible for Acute Poisoning: Drugs, Industrial and Household Chemicals and Natural Toxins
 - 1.10.2. Clinical Signs and Symptoms associated with Acute Poisoning for Rapid and Accurate Diagnosis
 - 1.10.3. Initial Management of Acute Poisoning: Stabilization of the Patient, Decontamination Techniques and Administration of Specific Antidotes when Indicated

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.

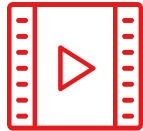
Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

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

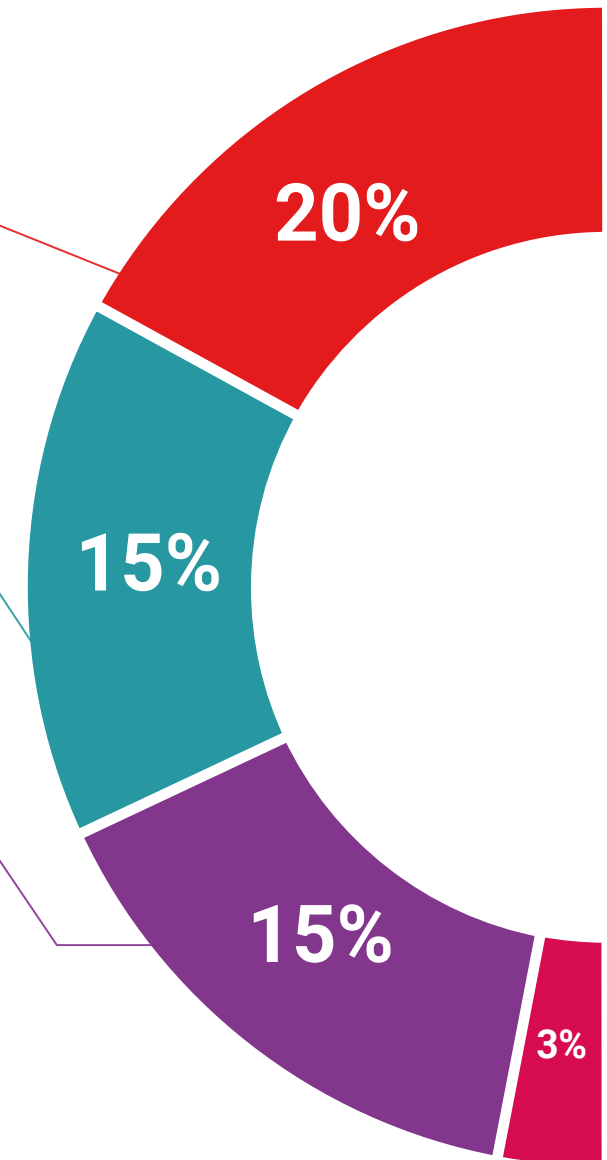
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

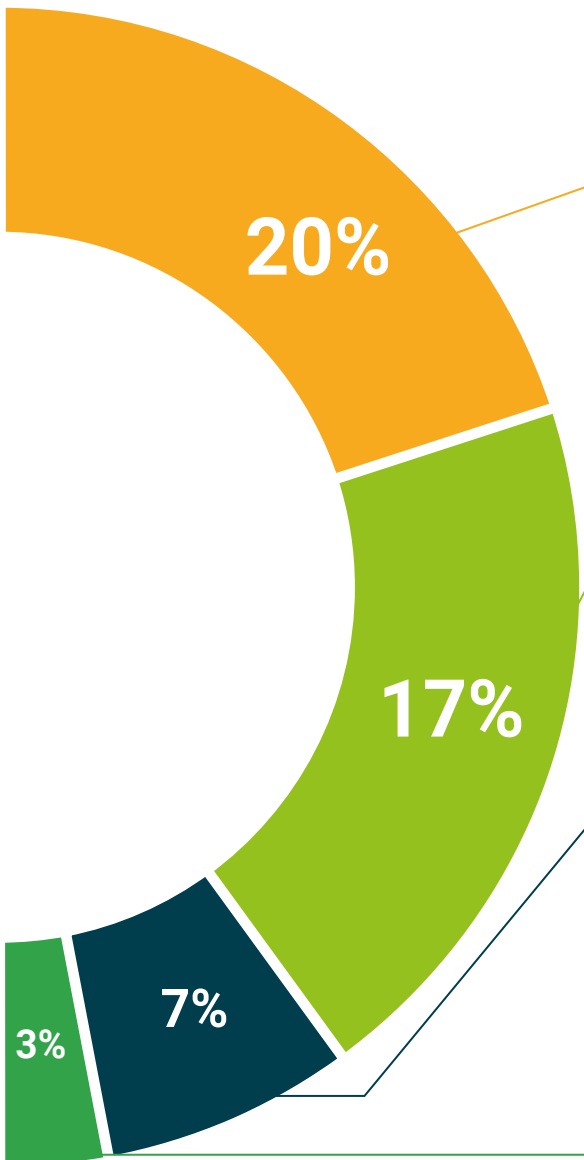
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



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.





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 Toxicology and Endocrinology 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.



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

This private qualification will allow you to obtain a **Postgraduate Certificate in Toxicology and Endocrinology 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 Toxicology and Endocrinology in the PICU**

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.



Postgraduate Certificate
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in the PICU

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Postgraduate Certificate

Toxicology and Endocrinology in the PICU

