

# Postgraduate Certificate Urgent Clinical Pictures in Pediatrics





## Postgraduate Certificate Urgent Clinical Pictures in Pediatrics

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/pk/medicine/postgraduate-certificate/urgent-clinical-pictures-pediatrics](http://www.techtute.com/pk/medicine/postgraduate-certificate/urgent-clinical-pictures-pediatrics)

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# 01

# Introduction

Acute hemodynamic, respiratory and neurological disorders involve a delicate field of developments, as they are the most urgent pathologies in the pediatric area. This is what drives specialists in the field to know the latest scientific evidence on the subject, which has motivated TECH to create this comprehensive program. Specialists will find a complete, up-to-date program on monitoring and caring for critically ill children outside the PICU, as well as the most innovative approaches to cerebral crisis, respiratory failure and anaphylaxis, among other equally serious conditions. This is an essential program for any specialist who wishes to keep up to date on everything in this field.





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*You will learn the most urgent new developments regarding hemodynamic, respiratory, metabolic and neurological warning signs and symptoms in pediatric patients outside the PICU”*

Given the delicate nature of pediatric patients with severe diagnostic conditions, TECH has brought together the best possible compendium of the most rigorous analgesia, fluid therapy, oxygen therapy, thoracic ultrasound and sedation currently available.

This means that the syllabus is composed of the most recent scientific evidence on pleural effusions, pneumothorax, cardio circulatory arrest and other urgent conditions in pediatric patients.

All this with the support of a great academic team, chosen by TECH for its wide academic and practical experience in the approach of all these clinical pictures. Specialists will benefit from a syllabus that addresses the most urgent, up-to-date information on complex pediatric clinical conditions, with the support of complementary readings and pioneering study guides in the field.

In order to facilitate the achievement of the program objectives as much as possible, TECH offers this course in a completely online format, without requiring the student's physical presence. This means that there are no fixed schedules or classes, giving students the freedom to download the entire syllabus and study it at their own pace, whenever it suits them.

This **Postgraduate Certificate in Urgent Clinical Pictures in Pediatrics** contains the most complete and up-to-date scientific program on the market. Its most notable features are:

- ◆ Practical case studies presented by experts in hospital pediatrics
- ◆ The graphic, schematic, and eminently practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ◆ Practical exercises where self assessment can be used to improve learning
- ◆ Special emphasis on innovative methodologies in the approach to pneumological affections
- ◆ 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 have the constant support of the entire TECH academic and technical team, who will be fully involved to give you the best possible learning experience”*

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*You will refresh and update your knowledge on the most recent clinical ultrasound and instrumental monitoring”*

*You will have the freedom to take on the course load at your own pace, without the pressure of face-to-face classes or predetermined schedules*

*A syllabus tailored to you, with the best theoretical and practical content on urgent clinical pictures in pediatrics*

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.

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 an immersive program designed 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 academic year. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.



# 02 Objectives

In order to achieve the objectives proposed in the course, TECH has made every effort to ensure the teaching material is of the highest possible quality. Therefore, with the complementary support of interactive summaries and videos of real clinical cases, specialists will have access to the best academic opportunity on urgent clinical pictures in pediatrics. Thanks to TECH's advanced teaching methodology, extensive and up-to-date learning can be achieved without having to invest a large amount of effort or hours of study.







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*The course will meet your most demanding expectations, as it has the quality guarantee of an expert technical and professional team behind it”*



## General Objectives

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- ◆ Master the latest techniques and knowledge in modern hospital pediatrics
- ◆ Become highly fluent in pediatric patient management, ensuring maximum quality and safety during the process
- ◆ Develop exemplary skills to provide high quality care, guaranteeing patient safety based on the latest scientific evidence
- ◆ Gain up-to-date knowledge of hospital pediatrics





## Specific Objectives

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- ◆ Delve deeper into the different hospital practices regarding initial child management in life threatening situations due to acute hemodynamic, respiratory and or neurological involvement
- ◆ Gain up-to-date knowledge of rapid intubation sequence and advanced cardiopulmonary resuscitation in children according to the latest ILCOR 2021 recommendations
- ◆ Know how to perform practical diagnosis and therapy management for children disconnected from the environment
- ◆ Know the course of action in case of status convulsus
- ◆ Deal with allergic reactions and anaphylaxis, oxygen therapy, fluid therapy, ECG, analgesia and sedation, and be introduced to thoracic ultrasound

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*You will maintain a high level of professional practice thanks to the up-to-date information provided by this comprehensive program”*

# 03

# Course Management

TECH has selected the most outstanding specialists in pediatrics to elaborate the program contents. For this reason, the syllabus combines the most recent scientific findings with current clinical practice. This guarantees that specialists will be able to incorporate all the contents provided by the teaching staff into their daily practice.



A close-up photograph of a person's eye, which is looking through a magnifying glass. The eye is light-colored and appears focused. The magnifying glass is held in front of the eye, and its lens is visible. The background is a dark blue gradient. The image is partially obscured by a white diagonal shape that contains the quote.

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*Top professionals in the healthcare field choose  
TECH for the quality of its programs and the  
wealth of educational resources at their disposal”*

## Management



### Dr. García Cuartero, Beatriz

- ♦ Chief of the Pediatrics Service and coordinator of the Pediatric Endocrinology and Diabetes Unit Ramón y Cajal University Hospital, Madrid, Spain
- ♦ Specialist Physician in Pediatrics at Severo Ochoa, Leganés University Hospital, Madrid
- ♦ Primary Care Pediatrician, Area 4, Madrid
- ♦ Degree in Medicine and Surgery from the Complutense University of Madrid
- ♦ Specialist Degree in Pediatrics, MIR accreditation at the Infantil Niño Jesús University Hospital, Madrid Specific Training Area: Pediatric Endocrinology
- ♦ PhD from the Autonomous University of Madrid (UAM) Expression of manganese superoxide dismutase, heme oxygenase and nitric oxide synthase enzymes in cultured pancreatic islets with interleukin 1 by in situ hybridization Unanimous Cum Laude Award
- ♦ Associate Professor of Pediatrics, Faculty of Medicine Alcalá de Henares University
- ♦ Social Security Research Fund (FISS) Grant, Steno Diabetes Center, Copenhagen/Hagedorn Research Laboratory Project: Pancreatic beta cell destruction mechanism and free radicals in type 1 diabetes mellitus

## Professors

### Dr. Buenache Espartosa, Raquel

- ◆ Specialist Physician in Pediatrics and Specialized Areas with a focus on Neuropediatrics Ramón y Cajal University Hospital, Neuropediatrics Profile
- ◆ Specialist Physician in Pediatrics and Specialized Areas Alcorcón Foundation University Hospital
- ◆ Resident Doctor in Pediatrics and Specialized Areas Ramón y Cajal University Hospital
- ◆ Associate Specialist Physician in Pediatrics and Specialized Areas Henares University Hospital, Neuropediatrics Profile
- ◆ Specialist Physician in Neuropediatrics, La Zarzuela Hospital
- ◆ Degree in Medicine and Surgery Autonomous University of Madrid
- ◆ Specialist in Pediatrics and Specialized Areas MIR training at Ramón y Cajal University Hospital, Subspecialization in Neuropediatrics
- ◆ Doctorate Studies Diploma in Advanced Doctoral Studies, which accredits research proficiency, with a qualification of outstanding in the area of Pediatrics in the doctoral program Medical Specialties at the University of Alcalá

### Dr. Blitz Castro, Enrique

- ◆ Specialist Physician in Pediatrics and Specialized Areas in the Pediatrics Service and Cystic Fibrosis Unit, providing the main care as a Pediatric Pneumologist at the Ramón y Cajal University Hospital
- ◆ Supervisor in charge of the Cystic Fibrosis Neonatal Screening Program at Ramón y Cajal University Hospital
- ◆ Resident Intern in Pediatrics and Specialized Areas at Ramón y Cajal University Hospital (Madrid, Spain) and in the Neonatology Department at La Paz University Hospital (Madrid, Spain), devoting the last year of residency completely to the subspecialty of Pediatric Pneumology
- ◆ Degree in Medicine from the Complutense University of Madrid. Clinical training at Gregorio Marañón University Hospital in Madrid
- ◆ PhD student on the Doctoral Program in Health Sciences at the University of Alcalá de Henares and Doctoral Thesis Results on the Neonatal Screening Program for Cystic Fibrosis in the Community of Madrid since its implementation in 2009 to 2022
- ◆ Researcher at the Biomedical Research Foundation, Ramón y Cajal University Hospital, contributing to ongoing research projects in the Cystic Fibrosis Unit at Ramón y Cajal University Hospital

**Dr. Morales Tirado, Ana**

- ◆ Specialist in Pediatrics at Ramón y Cajal University Hospital
- ◆ Specialist in Pediatrics at 12 de Octubre University Hospital, Móstoles Hospital and San Rafael Hospital
- ◆ Degree in Medicine from the Complutense University of Madrid

**Dr. Vázquez Ordóñez, Carmen**

- ◆ Faculty Specialist in Pediatric Nephrology and Pediatric Emergencies Ramón y Cajal University Hospital
- ◆ Rotation in the Pediatric Nephrology Service 12 de Octubre University Hospital
- ◆ Pediatric Resident Ramón y Cajal University Hospital
- ◆ Degree in Medicine and Surgery Navarra University
- ◆ Teaching Collaborator for 4th and 6th year in Medicine at the University of Alcalá de Henares
- ◆ Seminars in Medicine at the University of Alcalá de Henares

**Dr. Stanescu, Sinziana**

- ◆ Ramón y Cajal Hospital Area Specialist, Pediatrics Department, Metabolic Diseases Unit
- ◆ Ramón y Cajal Hospital Medical on-call duty in the Pediatric Intensive Care Unit
- ◆ Ramón y Cajal Hospital Area Specialist in Pediatrics
- ◆ Henares University Hospital Medical on-call duty
- ◆ Degree in Medicine, Carol Davila University of Medicine and Pharmacy, Bucharest Degree approved by the Ministry of Education and Science (Government of Spain)
- ◆ Specialized training in Pediatrics via MIR Specialist in Pediatrics and Specialized Areas at Ramón y Cajal University Hospital, Madrid Subspecialty: Pediatric Intensive Care, Metabolic Diseases







**Dr. Toledano Navarro, María**

- ◆ Assistant Specialist in Pediatric Cardiology in charge of the Family Cardiopathies consultation and Hemodynamics for diagnostic and interventional procedures for pediatric and adult congenital heart disease as first and second operator Ramón y Cajal University Hospital
- ◆ Degree in Medicine and Surgery from the Complutense University of Madrid
- ◆ EPALS accreditation at Great Ormond Street NHS Trust European Resuscitation Council
- ◆ ESC Certification in Congenital Heart Disease Echocardiography European Society of Cardiology
- ◆ Specialized training in Pediatrics at Ramón y Cajal Hospital (HRYC), Madrid Subspecialty in Pediatric Cardiology with training in Pediatric Cardiology and Adult Congenital Heart Disease

**Dr. Vázquez Martínez, José Luís**

- ◆ Head of the Pediatric ICU at Ramón y Cajal Hospital
- ◆ Postgraduate Diploma in Pediatrics and Specialized Areas, La Paz Children's Hospital
- ◆ Degree in Medicine and Surgery from the University of Oviedo
- ◆ PhD in Medicine and Surgery from the Autonomous University of Madrid
- ◆ Associate Professor, University of Alcalá

# 04

# Structure and Content

In order to offer the most effective, up-to-date program possible, the professors on the program have exhaustively outlined all the contents. Following a clear and concise structure, based on the latest educational technology, specialists will update all their practical knowledge of urgent clinical pictures in pediatrics.





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*You will have a reduced course load thanks to the great support provided by the educational guides and interactive program summaries”*

## Module 1. Treating Critically Ill Children Not in the Pediatric Intensive Care Unit

- 1.1. Warning Signs and Symptoms
  - 1.1.1. Hemodynamic
  - 1.1.2. Respiratory
  - 1.1.3. Metabolic
  - 1.1.4. Neurologic
  - 1.1.5. Hematologic
  - 1.1.6. Decompensation in Critically Ill Children
  - 1.1.7. Monitoring: Instrumental Monitoring Clinic. Clinical Ultrasound
  - 1.1.8. Cardiocirculatory Arrest
    - 1.1.8.1. Prevention
    - 1.1.8.2. Caring for Children in Arrest
    - 1.1.8.3. Stabilization
    - 1.1.8.4. Transport: Intrahospital and Interhospital
  - 1.1.9. Humanized Care for Critically Ill Children
    - 1.1.9.1. The Family
    - 1.1.9.2. Music Therapy
    - 1.1.9.3. Others
  - 1.1.10. Difficult Decisions
    - 1.1.10.1. Therapeutic Effort Limitation
    - 1.1.10.2. Critically Ill Children
    - 1.1.10.3. Asystole Donation
- 1.2. Cerebral Crisis
  - 1.2.1. Initial Assessment
  - 1.2.2. Differential Diagnosis
  - 1.2.3. Acute Treatment
- 1.3. Acute Respiratory Failure: Oxygen Therapy
  - 1.3.1. Acute Respiratory Failure
  - 1.3.2. Pathophysiology
  - 1.3.3. Classification
  - 1.3.4. Diagnosis
  - 1.3.5. Treatment
- 1.4. Allergic Reactions: Anaphylaxis
  - 1.4.1. Allergic and Clinical Reaction
  - 1.4.2. Etiology
  - 1.4.3. Diagnosis
  - 1.4.4. Treatment
  - 1.4.5. Prevention
- 1.5. Blood Gas Interpretation
  - 1.5.1. Blood Gas Interpretation
  - 1.5.2. Pathophysiology
  - 1.5.3. Basic Elements to Interpret Acid-Base Balance
  - 1.5.4. General Diagnosis
  - 1.5.5. Approach to Acid Base Balance Disturbances
- 1.6. Analgesia and Sedation
  - 1.6.1. Analgesia and Sedation
  - 1.6.2. Pain Assessment and Management
  - 1.6.3. Sedo Analgesia
    - 1.6.3.1. Adverse Effects
    - 1.6.3.2. Candidate Patients
    - 1.6.3.3. Necessary Personnel and Supplies
    - 1.6.3.4. Non-Pharmacological Measures in Pain Control and Anxiety
    - 1.6.3.5. Drugs and Antidotes
    - 1.6.3.6. Sedoanalgesia Procedures and Strategies
    - 1.6.3.7. Necessary Documentation
    - 1.6.3.8. Monitoring
- 1.7. Fluid Therapy
  - 1.7.1. Body Fluid Composition
  - 1.7.2. Main Mechanisms for Volume Regulation, Osmolarity and Acid Base Balance
  - 1.7.3. Calculating Basal Needs
  - 1.7.4. Treating Dehydration: Rehydration Routes (Indications, Serums used)
  - 1.7.5. Treating the Main Hydroelectrolyte and Acid Base Balance Disorders



- 1.8. Electrocardiogram
  - 1.8.1. General Aspects
  - 1.8.2. Electrical Changes during Childhood Development
  - 1.8.3. Sequential ECG Analysis: P Wave, PR Interval, QRS Complex, Q Wave, ST Segment, T Wave
  - 1.8.4. Characteristics of Atypical ECGs with Non-Pathological Findings
- 1.9. Thoracic Ultrasound Scan
  - 1.9.1. Clinical Ultrasound (POCUS)
  - 1.9.2. Artifacts and Biotology
  - 1.9.3. Pulmonary Ultrasound Semiology
  - 1.9.4. POCUS Diagnosis
    - 1.9.4.1. Consolidated Pneumonia
    - 1.9.4.2. Alveolo Interstitial Pneumonia
    - 1.9.4.3. Entrapment
    - 1.9.4.4. Heart Failure
    - 1.9.4.5. Pleural Effusion
    - 1.9.4.6. Pneumothorax



*You will be able to continue perfecting your pediatric approach techniques thanks to the up-to-date knowledge you will acquire throughout the course”*

05

# Methodology

This program provides you with 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 Harvard 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 learning, 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 termed Learning from an Expert strengthens knowledge and recall capacity, and generates confidence in the face of difficult decisions in the future.



#### 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 Urgent Clinical Pictures in Pediatrics 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 certificate without travel or laborious paperwork”*

This **Postgraduate Certificate in Urgent Clinical Pictures in Pediatrics** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** via tracked delivery\*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Certificate, and meets the requirements commonly demanded by labor exchanges, competitive examinations and professional career evaluation committees.

Title: **Postgraduate Certificate in Urgent Clinical Pictures in Pediatrics**  
Official N° of hours: **150 h.**



\*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.



future  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present  
online training  
development language  
virtual classroom

**tech** technological  
university

**Postgraduate  
Certificate**  
Urgent Clinical Pictures  
in Pediatrics

- » Modality: **online**
- » Duration: **6 weeks**
- » Certificate: **TECH Technological University**
- » Dedication: **16h/week**
- » Schedule: **at your own pace**
- » Exams: **online**

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