

# Postgraduate Diploma

## Advances in Hospital Pediatrics





## Postgraduate Diploma Advances in Hospital Pediatrics

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

Website: [www.techtitute.com/pk/medicine/postgraduate-diploma/postgraduate-diploma-advances-hospital-pediatrics](http://www.techtitute.com/pk/medicine/postgraduate-diploma/postgraduate-diploma-advances-hospital-pediatrics)

# Index

01

Introduction

---

*p. 4*

02

Objectives

---

*p. 8*

03

Course Management

---

*p. 12*

04

Structure and Content

---

*p. 18*

05

Methodology

---

*p. 26*

06

Certificate

---

*p. 34*

# 01

# Introduction

Pediatric fields such as nutrition, endocrinology, cardiology or patient safety undergo constant advances, which requires professionals to get up to date on the latest developments and scientific findings in the field. With this in mind, TECH has compiled a highly rigorous compendium of knowledge and action frameworks, including topics devoted to home hospitalization or genetic advances in familial heart disease. This is a great opportunity for any specialist who wants to catch up on the most important advances in the most relevant pediatric areas.





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*You will have access to a syllabus full of the best Advances in Hospital Pediatrics, including enteral and parenteral nutrition, the approach to infants presenting an Apparent Life-Threatening Event (ALTE) and oxygen therapy in acute respiratory failure”*



Given that pediatrics requires specialists with a high level of knowledge who must also be up to date on the latest developments, TECH has prepared a complete program to learn in the most efficient and comprehensive manner possible.

For this purpose, specialists and pediatric area managers have been selected for their excellent experience in dealing with all types of nutritional, endocrinological and cardiological pathologies. Their knowledge in the different patient safety processes makes the syllabus even more enriched, with sections devoted to delicate issues such as child abuse or pediatric palliative care.

All this advanced knowledge enables professionals to be fully and rigorously up to date, since all the topics have been written based on the latest scientific evidence in each field. Specialists are guaranteed to have access to the best possible academic offer, backed by a teaching team with ample merit to endorse all the issues addressed.

In fact, in order to make the work as easy as possible, TECH offers this Postgraduate Diploma in a completely online format, with no pre-set classes or timetables. The entire syllabus can be downloaded from the first day, and can be studied whenever, wherever and however the students prefer.

This **Postgraduate Diploma in Advances in Hospital 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



*This is the best possible academic opportunity to get up to date on the latest advances in hospital pediatrics”*

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*Incorporate into your daily practice the recent discoveries in the diagnostic approach to the most common skin lesions, as well as the clinical manifestations of adrenal insufficiency and the most advanced thoracic ultrasound”*

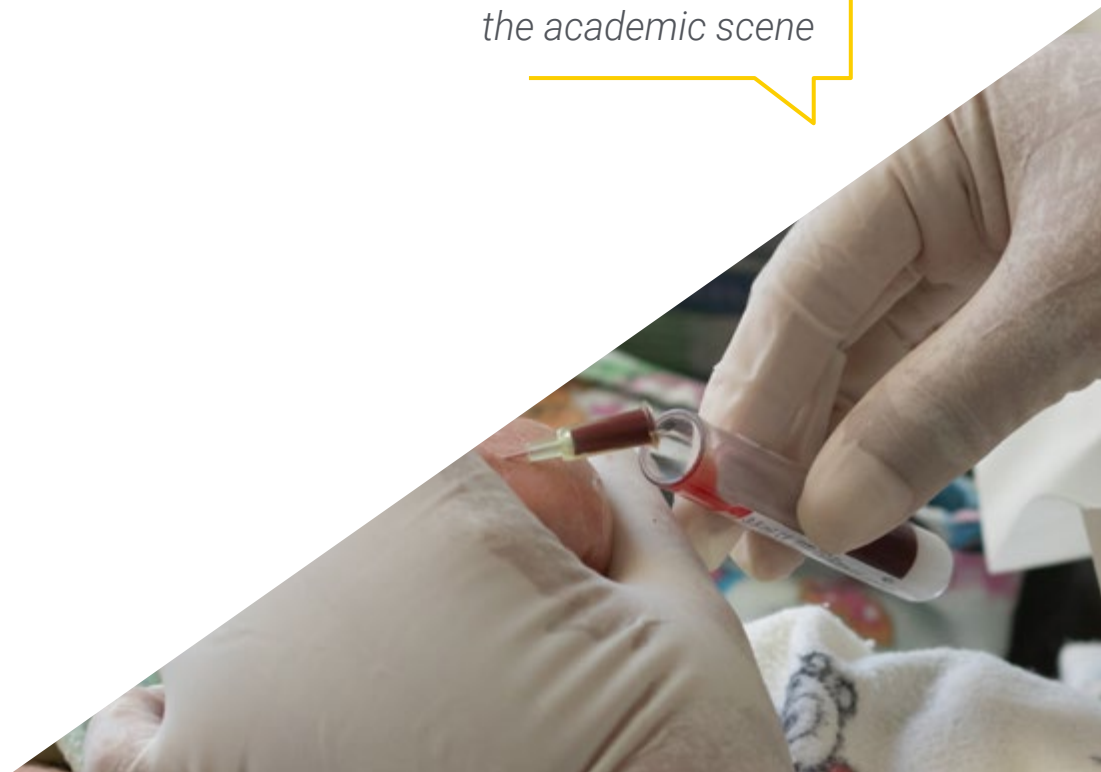
The program’s teaching staff includes professionals from the sector who contribute their work experience to this program, as well as renowned specialists from leading societies and prestigious universities.

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.

*You will be able to study all the contents at your own pace, without adhering to fixed schedules that take you away from your professional practice*

*This course offers you the best clinical audiovisual material on the academic scene*



# 02 Objectives

The course objective is to provide specialists with knowledge of the most relevant and recent advances in hospital pediatrics. This includes a complete review of various areas of interest such as cardiology and nutrition, so TECH has made every effort to ensure the teaching content is up to the most demanding medical expectations.







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*This is the best option to delve deeper into the field and refresh all your knowledge of hospital pediatrics, getting up to date on issues such as breastfeeding and artificial feeding or the most advanced catheterization”*



## 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 update of scientific evidence
- » Gain up-to-date knowledge of hospital pediatrics

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*All of TECH's academic and technical personnel will support you the entire way, ready to solve any doubts or problematic circumstances that may arise during the program”*





## Specific Objectives

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

- » 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 a 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

### Module 2. Cardiac Diseases in Pediatrics

- » Discover new diagnostic modalities in pediatric cardiology: echocardiographic strain, transesophageal echocardiography, among others
- » Delve deeper into the differential diagnosis for suspected heart disease in newborns, early diagnosis and initial stabilization treatment
- » Know the clinical approach to heart disease given current regulations, as well as cardiac flow obstruction pictures, the key ideas behind arrhythmias detection, pathologies acquired in childhood, and suspected heart failure in infants and children and new challenges

### Module 3. Endocrine System, Metabolism and Nutrition in Pediatrics

- » Delve deeper into nutritional assessment and the most frequent alterations observed during hospital admission, early diagnosis and therapeutic lines
- » Adopt a critical attitude toward new trends in diet and the possible deficiencies they can generate
- » Know when to suspect the presence of a metabolic disease, as well as different clinical pictures, some of which are frequent, such as hypoglycemia, diabetic onset and control using new technologies, polyuria-polydipsia and suspected adrenal insufficiency

### Module 4. Other Pediatric Processes

- » Interpret skin lesions and apparent lethal episodes
- » Manage complex pediatric patients
- » Address pediatric intensive care, palliative care, maltreatment and sexual abuse
- » Master standard procedures and new technologies
- » Delve into the mental health and safety of pediatric patients in a hospital setting

# 03

## Course Management

The professionals in charge of elaborating this Postgraduate Diploma have extensive specialized experience in the area of hospital pediatrics, including management and administration. This guarantees that specialists have access to up-to-date educational content adapted to the current requirements in pediatric fields. Furthermore, the professors have incorporated numerous real clinical cases throughout the syllabus to help specialists contextualize the knowledge they acquire of all the advances in the field.





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*You will access the educational material you need to efficiently get up to date on the advances in the field, supported by great professionals who understand both your needs and the needs of pediatric patients”*

## 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. 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. 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. 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 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

**Dr. Alkadi Fernández, Khusama**

- » Associate Specialist Physician in Pediatrics, Ramón y Cajal University Hospital
- » Associate Specialist Physician in Pediatrics, Puerta De Hierro Hospital
- » Degree in Medicine and Surgery, University of Seville
- » PhD in Medicine. Official Doctoral Program in Medicine, Autonomous University of Madrid
- » Incap Project, Puerta de Hierro, Majadahonda Health Research Institute

**Dr. Armero Pedreira, Paula**

- » Pediatrician at Puerta de Hierro Hospital in pediatric emergencies
- » Pediatrician at Casa de los Niños Children's Residence, a center for the protection of minors belonging to the General Directorate of Childhood and Family in the Community of Madrid
- » Pediatrician at San Rafael Hospital .Work experience in Social Pediatrics consultation
- » Pediatrician in the Pediatric Palliative Care Unit, Vianorte-Laguna Foundation
- » Resident Physician in Pediatrics, La Paz Children's Hospital. Sub-specialization in the Complex Pathology Unit at La Paz Children's Hospital and in the Palliative Care Unit in the Community of Madrid
- » Master's Degree in Pediatric Palliative Care, La Rioja International University
- » Postgraduate Studies in Social Pediatrics, University of Barcelona
- » Professor for the Master's Degree in Pediatric Palliative Care at La Rioja International University





**Ms. Clemente Linares, Raquel**

- » Nurse in Pediatric Hospitalization, Ramón y Cajal University Hospital
- » Nurse in Adult Hospitalization in different services, Ramón y Cajal University Hospital
- » University Diploma in Nursing, European University of Madrid
- » Nurse in the Meliá Hotels International medical service
- » Medical examinations: ECG, vision control, audiometry and other nursing tests, Quiron Prevention Superior Sports Council
- » Nursing Consultation and Health Promotion, Quiron Prevention Superior Sports Council

**Ms. Yelmo Valverde, Rosa**

- » Nurse Educator in Pediatric Diabetes at Ramón y Cajal University Hospital (Madrid)
- » Diabetes Nurse Educator for the Diabetes and Telemedicine Unit at San Rafael Hospital
- » Department of Extractions and Prevention and Occupational Risks Service at La Paz Hospital
- » Internal Medicine Department and Palliative Care Unit at Hospital San Rafael (Madrid)
- » Diploma in Nursing from Pontificia de Comillas University
- » Diploma in Company Nurse, Carlos III Institute and Ciudad Real Nursing University
- » Master's Degree in Obesity and Its Comorbidities: Prevention, Diagnosis, and Integral Treatment.,Alcalá de Henares University
- » Master's Degree in Foundations for the Care and Education of People with Diabetes, University of Barcelona

# 04

## Structure and Content

The structure and contents of this Postgraduate Diploma have been created following the premise of *relearning*, a technique of which TECH is a pioneer. This means specialists can incorporate all the Advances in Hospital Pediatrics they learn into their daily practice in a progressive and natural way. This helps to reduce the studying load and, even before the end of the program, the specialist is able to consolidate and update their knowledge of all the techniques and methods taught.





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*This up-to-date program will be a decisive point in your ongoing efforts to find the best scientific and practical content on the most prestigious hospital pediatrics”*

## Module 1. Treating Critically Ill Children Outside of 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. Neurological
  - 1.1.5. Hematological
  - 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

## Module 2. Cardiac Diseases in Pediatrics

- 2.1. Suspected Heart Disease in Newborns
  - 2.1.1. Past, Present and Future of Congenital Heart Disease in Pediatrics
  - 2.1.2. Fetal and Postnatal Circulation: Newborn Adaptation
  - 2.1.3. Physical Examination and Vital Signs
  - 2.1.4. Differential Diagnosis for Congenital Heart Disease in Newborns
  - 2.1.5. Prostaglandin Use
- 2.2. Diagnostic Tools for Pediatric Cardiac Pathology
  - 2.2.1. Basic Tools Utility for Diagnosing Congenital Heart Disease: ECG and Chest X-Ray
  - 2.2.2. Advances in Echocardiography
  - 2.2.3. Fetal Echocardiography
  - 2.2.4. Advanced Imaging Techniques for Diagnosing Congenital Heart Disease: CAT and MRI
  - 2.2.5. Diagnostic Cardiac Catheterization
- 2.3. Congenital Heart Disease Classification: Pulmonary Hypertension
  - 2.3.1. Segmental Classification for Congenital Heart Disease
  - 2.3.2. Congenital Heart Disease Pathophysiology: Hemodynamic Principles
  - 2.3.3. Pulmonary Hypertension, Classification and Diagnosis
  - 2.3.4. Pulmonary Hypertension associated with Congenital Heart Disease and Eisenmenger's Syndrome
  - 2.3.5. Therapeutic Advances in Pulmonary Hypertension Treatment
- 2.4. Cyanogenic Heart Disease
  - 2.4.1. Main Artery Transposition
  - 2.4.2. Truncus Arteriosus
  - 2.4.3. Anomalous Pulmonary Venous Drainage
  - 2.4.4. Fallot's Tetralogy and Variants
  - 2.4.5. Tricuspid Atresia
  - 2.4.6. Complete Septal Pulmonary Atresia
  - 2.4.7. Ebstein Anomaly
- 2.5. Non-Cyanogenic Heart Disease
  - 2.5.1. Interauricular Communication
  - 2.5.2. Ventricular Septal Defect
  - 2.5.3. Persistent Ductus Arteriosus
  - 2.5.4. Atrioventricular Canal
- 2.6. Conditions Obstructing Cardiac Flow and Other Less Common Congenital Heart Diseases
  - 2.6.1. Pulmonary Stenosis.
  - 2.6.2. Aortic Stenosis
  - 2.6.3. Aorta Coarctation
  - 2.6.4. Alcapa Syndrome
  - 2.6.5. Vascular Rings
- 2.7. Childhood-Acquired Heart Disease
  - 2.7.1. Pericarditis
  - 2.7.2. Myocarditis
  - 2.7.3. Infectious Endocarditis
  - 2.7.4. Kawasaki Disease
  - 2.7.5. Rheumatic Fever

- 2.8. Heart Rate and Electrical Conduction Abnormalities in Children
  - 2.8.1. Supraventricular Tachycardia
  - 2.8.2. Ventricular Tachycardias
  - 2.8.3. Atrioventricular (AV) Block
  - 2.8.4. Cartography and Catheter Ablation
  - 2.8.5. Pacemakers and Automatic Implantable Defibrillators
- 2.9. Heart Failure in Infants and Children
  - 2.9.1. Etiological and Pathophysiological Characteristics
  - 2.9.2. Clinical Characteristics: Diagnostic Tools in Heart Failure
  - 2.9.3. Medical Treatment for Pediatric Heart Failure
  - 2.9.4. Ventricular Assist Devices and Other Technical Advances
  - 2.9.5. Pediatric Heart Transplantation
- 2.10. Pediatric Familial Heart Disease: Genetic Alterations
  - 2.10.1. Clinical Genetic Evaluation
  - 2.10.2. Cardiomyopathies: Hypertrophic, Dilated, Arrhythmogenic and Restrictive Dysplasia
  - 2.10.3. Connectivopathies
  - 2.10.4. Canalopathies
  - 2.10.5. Syndromes Related to Heart Disease: Down Syndrome, DiGeorge Syndrome, Turner Syndrome, Williams Beuren Syndrome and Noonan Syndrome

### Module 3. Endocrine System, Metabolism and Nutrition in Pediatrics

- 3.1. Nutritional Status Assessment
  - 3.1.1. Nutritional Status Assessment
  - 3.1.2. Medical History, Nutritional Anamnesis and Physical Examination
  - 3.1.3. Body Composition Evaluation: Anthropometry, Weight / Height Ratio Indexes: Body Composition
  - 3.1.4. Nutritional Screening
- 3.2. Healthy Children Diet
  - 3.2.1. Breastfeeding
  - 3.2.2. Artificial Breastfeeding
  - 3.2.3. Healthy Children Diversification
- 3.3. Enteral Nutrition and Parenteral
  - 3.3.1. Detecting Patients in Need of Nutritional Support
  - 3.3.2. Requirement Calculations
  - 3.3.3. Choosing Artificial Nutrition Options
  - 3.3.4. Enteral Nutrition
    - 3.3.4.1. Access Routes
    - 3.3.4.2. Enteral Nutrition Formulas used in Pediatrics
    - 3.3.4.3. Monitoring and Complications
  - 3.3.5. Parenteral Nutrition
    - 3.3.5.1. Access Routes
    - 3.3.5.2. Monitoring and Complications
  - 3.3.6. Refeeding Syndrome
- 3.4. Deficiencies caused by New Forms Nutrition: New Diet Trends
  - 3.4.1. Types of Vegetarian Diets
  - 3.4.2. Macro- and Micro-Nutrients at Risk in Vegetarian Diets
  - 3.4.3. Vegetarian or Vegan Diet Recommendations according to Age
  - 3.4.4. Dietary Mistakes in Infants: Vegetable Drinks
  - 3.4.5. Information Sources
- 3.5. Approaching Patients with Suspected Inborn Errors of Metabolism (IEM)
  - 3.5.1. Inborn Errors of Metabolism (IEM)
  - 3.5.2. Clinical Approach
    - 3.5.2.1. IEM: Acute Presentation in the Neonatal Period and in Children <1 Year of Age
    - 3.5.2.2. IEM: Recurrent Seizures
    - 3.5.2.3. IEM: Chronic or Progressive Clinical Course
  - 3.5.3. Diagnostic Procedures
  - 3.5.4. Treatment
    - 3.5.4.1. Emergency Treatment
    - 3.5.4.2. Pharmacological Treatments and Cofactors
    - 3.5.4.3. Nutrition
    - 3.5.4.4. Others (Extrarenal Depuration Techniques, Organ Transplantation, etc.)

- 3.6. Hypoglycemia
  - 3.6.1. Hypoglycemia
  - 3.6.2. Directed Initial Evaluation: Anamnesis, Physical Examination
  - 3.6.3. Complementary Examinations during Hypoglycemia Episodes
  - 3.6.4. Differential Diagnosis
  - 3.6.5. Treatment
- 3.7. Polydipsia-Polyuria
  - 3.7.1. Polyuria in Pediatric Patients: Normal Diuresis by Age Group
  - 3.7.2. Etiopathogenesis
    - 3.7.2.1. Aqueous Diuresis: Osmotic Diuresis
    - 3.7.2.2. Osmotic Diuresis: Most Common Causes
  - 3.7.3. Clinical Practice for Polyuric States
  - 3.7.4. Diagnosis
    - 3.7.4.1. Anamnesis and Physical Examination
    - 3.7.4.2. Complementary Tests: Water Restriction Test or Miller's Test Indications Limitations Arginine Vasopressin (AVP) and Copeptin Imaging and Other Tests
  - 3.7.5. Treatment: Side Effects and Precautions
  - 3.7.6. Current Lines of Research
- 3.8. Diabetes Mellitus
  - 3.8.1. Introduction
  - 3.8.2. Epidemiology
  - 3.8.3. Etiopathogenesis
    - 3.8.3.1. Type 1 Diabetes (T1D)
    - 3.8.3.2. Type 2 Diabetes (T2D)
    - 3.8.3.3. Monogenic Diabetes: Type Maturity Onset Diabetes of the Young (MODY) Diabetes Neonatal Diabetes
    - 3.8.3.4. Cystic Fibrosis (CF) Related Diabetes
    - 3.8.3.5. Other Specific Types
  - 3.8.4. Diagnostic Criteria
  - 3.8.5. Clinical Presentation of T1D and Action
    - 3.8.5.1. Diabetic Ketoacidosis
    - 3.8.5.2. Hyperglycemia with / without Ketosis
    - 3.8.5.3. Hyperglycemia in Asymptomatic Patients
  - 3.8.6. T1D Treatment and Monitoring
    - 3.8.6.1. Glycemic Targets
    - 3.8.6.2. Diabetes Education
    - 3.8.6.3. Insulin Therapy
    - 3.8.6.4. Feeding
    - 3.8.6.5. Physical Exercise
    - 3.8.6.6. Glycemic Monitoring
    - 3.8.6.7. Screening for Acute and Chronic Complications
  - 3.8.7. T2D Treatment and Monitoring
  - 3.8.8. MODY Treatment and Monitoring
  - 3.8.9. Other Types of Diabetes
- 3.9. Adrenal Insufficiency
  - 3.9.1. Adrenal Insufficiency
  - 3.9.2. Etiological Classification
    - 3.9.2.1. Primary or Adrenal
    - 3.9.2.2. Secondary-Tertiary or Hypothalamo-Pituitary
  - 3.9.3. Clinical Manifestations
    - 3.9.3.1. Acute Adrenal Gland Failure: Severity Criteria
    - 3.9.3.2. Chronic Adrenal Gland Insufficiency
  - 3.9.4. Diagnosis
    - 3.9.4.1. Adrenal Crisis: Lab Findings
    - 3.9.4.2. Hypocortisolism: Suspicion of Adrenal Insufficiency Analytical Determinations
      - 3.9.4.2.1. Initial Complementary Tests: Cortisol and Plasma Corticotropin (ACTH) Reference Values
      - 3.9.4.2.2. Stimulus Hormone Tests: ACTH Test Insulin Hypoglycemia Test Other Tests
      - 3.9.4.2.3. Second Level Complementary Tests: Imaging, Microbiology, Pathological Anatomy, Immunology and Genetic Tests

- 3.9.5. Differential Diagnosis for Hypocortisolism: Relevant Entities
  - 3.9.5.1. Primary Forms
  - 3.9.5.2. Secondary and Tertiary Forms
- 3.9.6. Treatment
  - 3.9.6.1. Adrenal Crisis
  - 3.9.6.2. Replacement Therapy
  - 3.9.6.3. Adrenal Crisis Management and Prevention
  - 3.9.6.4. Chronic Corticosteroid Therapy Withdrawal
  - 3.9.6.5. Pre- and Post-Operative Management
  - 3.9.6.6. Patient and Family Education

## Module 4. Other Pediatric Processes

- 4.1. Most Common Injuries
  - 4.1.1. Etiology
  - 4.1.2. Diagnostic Approach
  - 4.1.3. Febrile and Afebrile Exanthema
  - 4.1.4. Vesicular Exanthem
  - 4.1.5. Purpuric Exanthem
  - 4.1.6. Morbilliform Exanthem
  - 4.1.7. Kawasaki Disease
  - 4.1.8. Scarlet Fever
  - 4.1.9. Sevens-Johnson Syndrome
- 4.2. Lactating Infant Presenting Apparent Life-Threatening Event (ALTE) or BRUE (Brief Reported Unexplained Event)
  - 4.2.1. Lactating Infant Presenting ALTE
  - 4.2.2. Epidemiology
  - 4.2.3. Risk Factors
  - 4.2.4. Hospital Diagnosis and Management
  - 4.2.5. Hospital Discharge Criteria
- 4.3. The Role of Nursing during Pediatric Hospitalization
  - 4.3.1. Illness in Childhood: Psychological Reactions and Attitude toward Hospital Admission
  - 4.3.2. Nursing Care during Hospitalization
    - 4.3.2.1. Objectives According to Age
    - 4.3.2.2. Parental Care / Interventions
    - 4.3.2.3. Environment Care / Interventions
  - 4.3.3. Hospitalization Procedures
    - 4.3.3.1. Measuring Vital Signs according to Age, Anthropometric Parameters and Capillary Measurements
    - 4.3.3.2. Secretion and Foreign Body Aspiration
    - 4.3.3.3. Clamping Techniques
    - 4.3.3.4. Probes
    - 4.3.3.5. Sample Collection
    - 4.3.3.6. Medication Administration, Reconstitution and Dosage Calculation
    - 4.3.3.7. Vesiculo-Vacuolar Organelle (VVO) Channeling
    - 4.3.3.8. Bandages
    - 4.3.3.9. Cardiopulmonary Resuscitation in Pediatrics
- 4.4. Nursing Care in Managing Recently Diagnosed Diabetic Children: Diabetes Education
  - 4.4.1. Patient and Family Needs upon Onset: Empowerment
  - 4.4.2. Capillary Ganglion Cell Layer (GCL) and Continuous Glucose Monitoring (CGM)
  - 4.4.3. Injection Technique, Rotational Zones
  - 4.4.4. Insulin: Storage and Maintenance
  - 4.4.5. Day-to-Day Diabetes Management
    - 4.4.5.1. Acute Complications, Hypoglycemia and Hyperglycemia Management (Symptoms, Prevention and Correction)
    - 4.4.5.2. Diabetes during Illness: Diabetic Ketoacidosis (DKA) Prevention
    - 4.4.5.3. Blood Glucose and Diet: Carbohydrate (CH) Quantification Glycemic Index Label Reading
    - 4.4.5.4. Attitude toward Exercise
    - 4.4.5.5. Children at School: Necessary Supplies



- 4.5. General Postoperative Patient Care
  - 4.5.1. Hospital Pediatrician Role in Cases of Children and Adolescents undergoing Surgery
  - 4.5.2. General Postoperative Care
    - 4.5.2.1. Controlling Temperature
    - 4.5.2.2. Liquids and Electrolytes
    - 4.5.2.3. Nausea and Vomiting
    - 4.5.2.4. Postoperative Nutrition
    - 4.5.2.5. Respiratory Function Recovery
    - 4.5.2.6. Early Rest and Mobilization
    - 4.5.2.7. Surgical Antibiotic Prophylaxis
    - 4.5.2.8. Controlling Postoperative Pain
- 4.6. Complex Pediatric Patients
  - 4.6.1. Chronicity and Complexity: Defining Populations
  - 4.6.2. Special Health Needs
  - 4.6.3. Technology Dependency: Nutritional, Respiratory and Cardiac Support
- 4.7. Home Hospitalization
  - 4.7.1. Home Hospitalization
  - 4.7.2. Historical Journey
  - 4.7.3. Subsidiary Patients and Families
    - 4.7.3.1. Benefits for Patients and Family
    - 4.7.3.2. Benefits for the National Health System
  - 4.7.4. Organization: Resources and Coordination
- 4.8. Pediatric Palliative Care
  - 4.8.1. Palliative Care and Patient Classification
  - 4.8.2. End-of-Life Patient and Family Care
    - 4.8.2.1. Decision-Making
    - 4.8.2.2. Communication with Patients and Families
  - 4.8.3. Palliative Medicine: Treatment and Support
    - 4.8.3.1. Pain Treatment
    - 4.8.3.2. Palliative Sedation
    - 4.8.3.3. Care during and after Death
- 4.9. Child Abuse
  - 4.9.1. Types of Child Maltreatment
  - 4.9.2. Epidemiology
  - 4.9.3. Clinical manifestations
  - 4.9.4. Approach to Suspected Child Abuse in Pediatrics
- 4.10. Liaison and Interconsultation Psychiatry
  - 4.10.1. The Child and the Family in the Face of Illness and Hospitalization
  - 4.10.2. Chronic Diseases
  - 4.10.3. Psychopathology associated with Physical Pathologies
  - 4.10.4. Delirium
  - 4.10.5. Pain
  - 4.10.6. Psychosomatics
  - 4.10.7. Suicidal Behavior
  - 4.10.8. Psychopharmacology
- 4.11. Pediatric Patient Safety in a Hospital Setting
  - 4.11.1. Safety as a Critical Objective in Quality Care
  - 4.11.2. Adverse Events (AEs) in Pediatric Hospitalization
    - 4.11.2.1. Most Frequent Causes
    - 4.11.2.2. Most Frequent AEs in Pediatrics
    - 4.11.2.3. Prevention
  - 4.11.3. Patient Safety Culture
  - 4.11.4. Information Sources: Notification and Record Systems
  - 4.11.5. Analysis Systems
  - 4.11.6. Safety Strategies: Safe Practices

# 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. 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.

“

*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

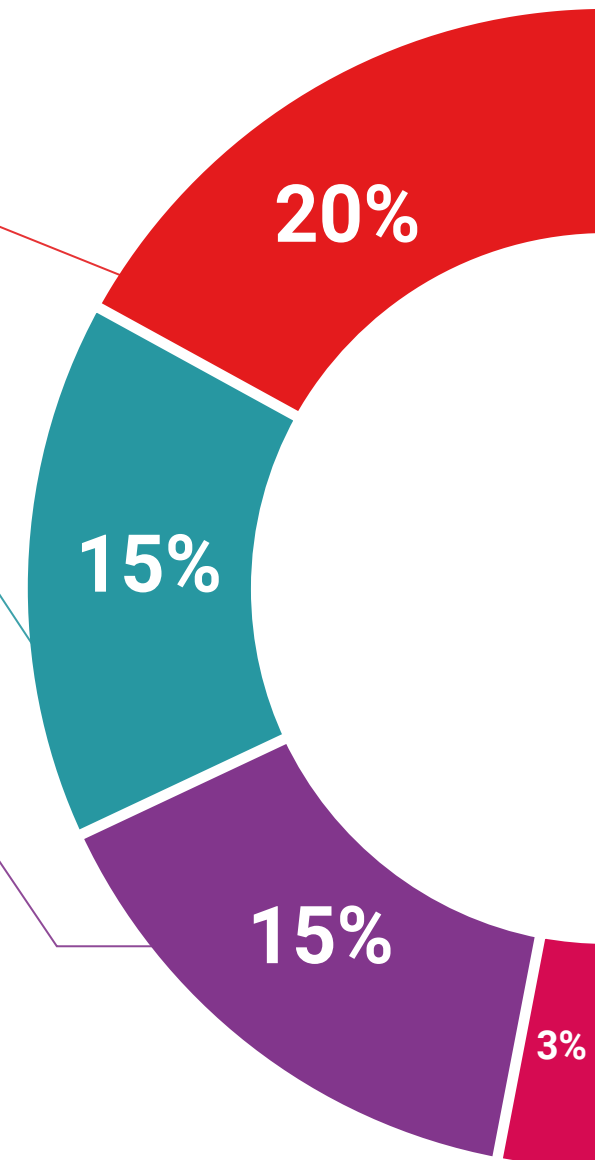
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

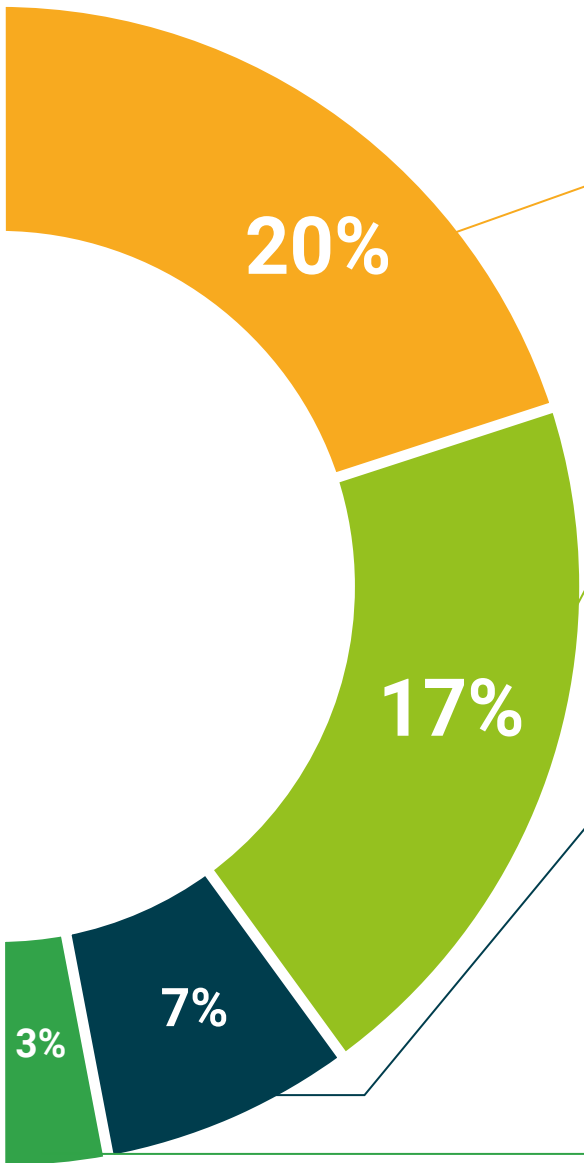


#### Additional Reading

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 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 Diploma in Advances in Hospital Pediatrics guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.



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*Successfully complete this program  
and receive your certificate without  
the hassle of travel or paperwork”*

This **Postgraduate Diploma in Advances in Hospital 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 Diploma** issued by **TECH Technological University** via tracked delivery\*.

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

Title: **Postgraduate Diploma in Advances in Hospital Pediatrics**

Official N° of Hours: **600 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  
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education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present  
online training  
development language  
virtual classroom



## Postgraduate Diploma Advances in Hospital Pediatrics

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

# Postgraduate Diploma

## Advances in Hospital Pediatrics

