Postgraduate Diploma Neonatal and Pediatric Surgical Oncology



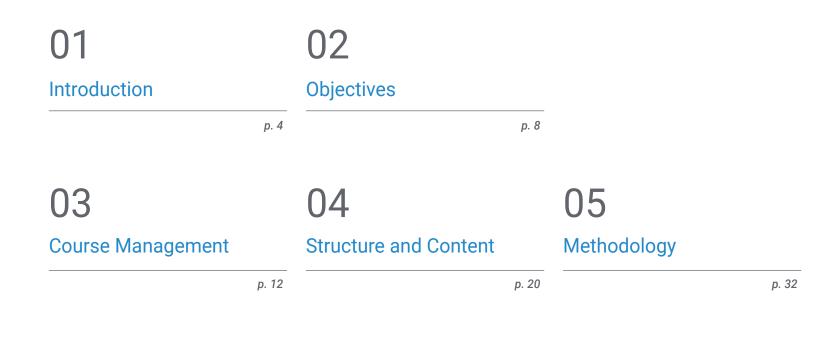


# **Postgraduate Diploma** Neonatal and Pediatric Surgical Oncology

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-neonatal-pediatric-surgical-oncology

# Index



06 Certificate

# 01 Introduction

Pediatric Oncological Surgery has acquired greater relevance in recent decades, mainly due to greater specialization of pediatric surgeons, trained in the management of tumors in different anatomical locations. Neonatal surgery follows the same line, in a clinical context where fetal ultrasound, screening techniques and new therapies have allowed a wider field of action. This drives physicians in the area to seek an increasingly comprehensive update and aimed at more specialized skills, which is why TECH Global University has created this degree. In a completely online format and free of on-site classes, you will have access to the most recent developments in Neonatal and Pediatric Oncologic Surgery.



Get up to date in some of the most challenging areas of Pediatric Surgery, with a comprehensive and complete syllabus covering the most relevant pathologies at the moment"

## tech 06 | Introduction

In few areas of Pediatric Surgery is there such a wide spectrum of patients as in Pediatric Oncology, since it covers up to 18 years of age. The age disparity and the anatomical variety pose an absolute challenge for the specialists in this area, since they must master tumors of the neck, chest wall, retroperitoneum, pelvis and other areas of the body. Surgically, there is also the need to master vascular surgery, in order to solve possible operative risks.

It is precisely the advance in minimally invasive surgery techniques that has led to a beneficial field of action in the pediatric area of oncology, boosting other more recent fields such as Neonatal Surgery as well. The development of fetoscopy or EXIT surgery already forces the physicians to have a more updated and extensive knowledge, which has motivated the creation of this University Postgraduate Diploma.

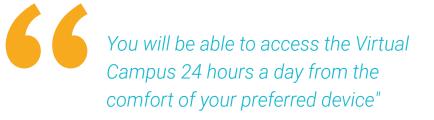
TECH Global University has brought together a large team of experts in Pediatric Surgery and its specialties to develop a comprehensive academic degree in the field of Pediatric Neonatal and Oncologic Surgery. The specialist will have access to the most recent and important developments in both disciplines, without forgetting robotics and surgical patient management.

All of this in a 100% online format, with no in-person classes or restricted schedules. In this way, it is the student who decides how to distribute the entire teaching load, adapting it to his or her needs at all times. All the material of the Virtual Campus can be downloaded from any device with internet connection, being able to consult it later from the *Tablet*, smartphone or computer of your choice. This **Postgraduate Diploma in Neonatal and Pediatric Surgical Oncology** contains the most complete and up-to-date program on the market. The most important features include:

- The development of practical cases presented by Pediatric Surgery experts
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential 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 work
- Content that is accessible from any fixed or portable device with an Internet connection

Get updated on the latest scientific postulates on pediatric sarcomas, pediatric ureteroscopy and renal trauma in children"

## Introduction | 07 tech



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

Its multimedia content, developed with the latest educational technology, will allow the professional a situated and contextual learning, that is, a simulated environment that will provide an immersive training programmed to train in real situations.

The design of this program focuses on Problem-Based Learning, in which the professional will have to try to solve the different professional practice situations that will arise throughout the academic course. This will be done with the help of an innovative system of interactive videos made by renowned experts.

Decide when, where and how to take on the entire course load, having the flexibility you need at all times.

Deepen your knowledge of the most advanced pediatric specialties in a degree program prepared by experts in these specialties.

# 02 **Objectives**

As both Neonatal Surgery and Pediatric Oncological Surgery are two of the most complex specialties within Pediatrics, the main objective of this Postgraduate Diploma is to improve the specialist's skills in them. For this purpose, special emphasis is placed on an eminently practical content, encouraging the student's own critical thinking through a variety of analysis of clinical cases and real examples.

It analyzes a large number of real cases provided by the teachers themselves, giving you a differentiating context on the most advanced Neonatal and Pediatric Oncologic Surgery"

# tech 10 | Objectives



## **General Objectives**

- Develop specialized knowledge and current treatments in pediatric surgery
- Compile the different diagnostic methods, as well as the different therapeutic options, both medical and surgical depending on the pathology
- Expose the possible associated complications and the prognosis of these diseases
- Establish the current treatment guidelines for each of the pathologies described



**66** Incorporate into your daily practice the most effective practice the most effective work methodology in the pediatric area even before finishing your degree"



# Objectives | 11 tech

# Spec

## Specific Objectives

# Module 1. Pediatric Surgery Surgical Patient Management. Trauma Robotics in Pediatric Surgery

- Generate knowledge in health care bioethics
- Analyze the most recent advances in laparoscopic and robotic surgery.
- Determine the pre and post-operative nutritional management of the surgical patient.
- Acquire the necessary knowledge to establish the different modes of special, enteral, parenteral and other feeding routes.
- Establish the concept of bioethics Establishment of therapeutic effort limitation and palliative care
- Review the latest updates in laparoscopic surgery and share initial experiences in the introduction of robotic surgery applied to pediatric surgery, as well as in the fields that it applies

## Module 2. Pediatric Fetal and Neonatal Surgery

- Develop the concept of Fetal Medicine and point out the necessary participation of the pediatric Surgeon in the diagnosis and treatment of malformative pathology during the fetal period.
- Analyze the normal embryological development and know the alterations that condition the main neonatal congenital malformations.
- Examine the surgical pathologies acquired in the neonatal period and know their differential diagnosis.
- Analyze the evolutionary and prognostic advice of the main perinatal congenital pathologies for the parents of the affected fetus
- Propose a material and human resources guide for surgical procedures in Neonatal Intensive Care Units.

- Examine the main international consensus guidelines on perinatal management and pathologies follow-up treated in the neonatal period, mainly esophageal Atresia, congenital diaphragmatic Hernia and anorectal Malformation.
- Establish the current clinical, analytical and radiological criteria for the evaluation of infectious intestinal processes acquired in the neonatal period.
- Establish the current protocols of short bowel syndrome management and treatment as a sequel of neonatal surgical pathologies

### Module 3. Pediatric Oncological Surgery

- Create specialized knowledge on the most frequent solid neoplasms in pediatrics
- Determine the appropriate diagnostic approach to the different pediatric neoplasms
- Establish appropriate treatment strategies for each of these tumors
- Evaluate the main causes of surgical emergencies in pediatric oncology and clarify the surgical indications in these cases
- Substantiate the basic principles in pediatric oncology
- Analyze the tumor pathologies that occur in the pediatric age group
- Update staging and treatment protocols
- Systematize the surgical approach to tumor pathologies in pediatric age
- Generate specialized knowledge on the main biopsy techniques in the pediatric oncology patient
- Acquaint the pediatric surgeon with the diagnosis and surgical treatment of the main pediatric tumors
- Carry out an update on fertility preservation techniques in the pediatric oncologic patient

# 03 Course Management

In order to guarantee the highest possible quality in all the contents provided by this University Expert, TECH Global University has not only gathered a complete team in Pediatric Surgery, but also specialists from different areas of the same. This way, the student obtains a multidisciplinary and distinctive vision of everything related to Fetal Medicine and Pediatric Oncology, especially of the most relevant clinical practice.

Rely on the knowledge and clinical strategies of a large medical team, with experience in the most prestigious centers and hospitals".

## tech 14 | Course Management

### Management



### Dr. Paredes Esteban, Rosa María

- Head of Service and Director of the Pediatric Surgery Clinical Management Unit of the Reina Sofia Hospital
- Specialist in Pediatric Surgery at the Reina Sofia Hospital
- Specialist in Pediatric Surgery at Jaén Medical-Surgical Hospital
- Responsible for Pediatric Surgery Training at the Reina Sofia Hospital
- President of the Spanish Society of Pediatric Surgery
- Coordinator of the Bioethics Commission of the Spanish Society of Pediatric Surgery
- Coordinator of the Vascular Anomalies Committee of the Reina Sofia University Hospital
- Coordinator of the Living Donor Transplant Commission (Renal and Hepatic) of Córdoba
- Doctor of Medicine and Surgery from the University of Granada
- Graduate in Medicine and Surgery from the University of Granada
- Member of European Society of Pediatric Endoscopic Surgery, Spanish Society of Pediatric Surgery, Editorial Committee of the Spanish Society of Pediatric Surgery Journal, Scientific Evaluation Committee of the Spanish Society of Pediatric Surgery

## Course Management | 15 tech

## Professors

### Dr. Pérez Bertólez, Sonia

- Consultant in Pediatric Surgery, Neonatal Surgery and Pediatric Urology at Teknon Medical Center
- Specialist in the Pediatric Urology Section at the Sant Joan de Déu Children's Hospital
- Specialist in Pediatric Surgery at the Virgen del Rocío Children's Hospital
- Specialist in Pediatric Surgery at the Toledo Medical Center
- Doctor of Medicine and Surgery at the University of Malaga
- Graduate in Medicine and Surgery from the University of Santiago de Compostela
- Specialty of Pediatric Surgery at the University of Carlos Haya Medical Center
- Master's Degree in Pediatric Urology
- Postgraduate Diploma in Pediatric Surgery
- Fellow of the European Board of Pediatric Surgery

## Dr. Álvarez García, Natalia

- Pediatric Surgery Service Coordinator of Parc Tauli Health Corporation
- Specialist in Pediatric Surgery at Parc Tauli Health Corporation
- Resident tutor and full professor at the UAB
- Doctor of Medicine from the University of Zaragoza
- Graduate in Medicine from the University of Zaragoza
- Specialty in Pediatric Surgery at Miguel Servet University Hospital
- Master's Degree in Bioethics and Law from the University of Barcelona

## Dr. Cadaval Gallardo, Carlos

- Specialist in the Pediatric Digestive Surgery Unit at the Virgen del Rocío University Hospital
- Specialist in the Oncological, Neonatal and Liver Surgery Unit of the Vall d'Hebron University Hospital
- Specialist in Pediatric Surgery at the Universitari Dexeus Hospital
- Specialist in Pediatric Surgery at Teknon Medical Center
- Specialist in Pediatric Surgery at the Hospital of Quirónsalud Barcelona
- Specialist in Pediatric Surgery at the Maternal Child Hospital of Badajoz
- Graduate in Medicine at the University of Extremadura
- Master's in Education and Audiovisual Communication from the International University of Andalusia
- Master's in Minimally Invasive Surgery in Pediatrics at CEU Cardenal Herrera University

### Dr. Gómez Cervantes, Juan Manuel

- Specialist in Pediatric Surgery at the San Carlos Hospital
- Specialist in the Maternal and Infant Section of the Gregorio Marañón Hospital
- Degree in Medicine from the University of Navarra
- Specialty in Pediatric Surgery at La Paz Hospital
- Practical stay at the Karmanos Center of the Wayne State University of Michigan
- Fellowship in Minimally Invasive Surgery at the World Laparoscopy Hospital
- Master's in Minimally Invasive Surgery at the CEU Cardenal Herrera University

# tech 16 | Course Management

### Dr. García González, Miriam

- Specialist in the Pediatric Urology department of La Coruña University Medical Center
- Specialist in Pediatric Surgery at the HM Modelo-Belén Hospital
- Medical students Coordinator of the Pediatric Surgery Service of La Coruña University Medical Center
- Teaching Collaborator at the University of Santiago de Compostela
- Doctor of Medicine and Surgery from the University of La Coruña
- Graduate in Medicine and Surgery from the University of Oviedo
- Specialist in Pediatric Surgery at La Coruña University Medical Center
- Master's Degree in Health Care and Research in the Specialty of Clinical Research by the University of La Coruña
- Master's in Pediatric Urology by the University of Andalusia

### Dr. Parente, Alberto

- Specialist in Pediatric Surgery at Reina Sofia University Hospital
- Specialist in Pediatric Surgery at Torrejón University Hospital
- Specialist in Pediatric Surgery in the Pediatric Urology Section of Gregorio Marañón Children's Hospital
- Doctor of Medicine from the Complutense University of Madrid
- Graduate in Medicine from the University of Valladolid
- Specialist in Pediatric Surgery
- Master's Degree in Clinical Management and Medical and Healthcare Management from the University
- Cardenal Herrera CEU
- Master's in Pediatric Urology from the International University of Andalusia
- Member of European Society of Pediatric Urology



## Course Management | 17 tech

### Dr. Peiro Ibáñez, José Luis

- Head of Fetal Endoscopic Surgery at Cincinnati Children's Fetal Care Center
- Lead Researcher at The Center for Fetal and Placental Research
- Professor of Surgery at the University of Cincinnati Medical College
- Pediatric and Thoracic Surgical Specialist at Cincinnati Children's Hospital Medical Center
- Specialist in Pediatric Surgery at Vall d'Hebron Hospital and de Nens Hospital
- Degree in Medicine and Surgery from the Autonomous University of Barcelona

### Dr. Soto Beauregard, Carmen

- Head of the Pediatric Surgery Department of the San Carlos Clinical Hospital
- Specialist in Pediatric Surgery at La Paz University Hospital
- Vicepresident of the National Commission of Pediatric Surgery Specialties
- Member of the Board of Directors of the Spanish Society of Pediatric Surgery
- Doctor of Medicine and Surgery from the Autonomous University of Madrid
- Graduate in Medicine and Surgery from the Complutense University of Madrid
- Specialty in Pediatric Surgery at La Paz University Hospital
- European Board in Pediatric Surgery
- Master's in Health Services Management by the European Institute of Health and Social Welfare
- Master's in Health Services and Health Companies Management

## tech 18 | Course Management

### Dr. Rodríguez de Alarcón, Jaime

- Specialist in Pediatric Surgery at the San Carlos Clinical Hospital
- Specialist in Pediatric Surgery at Sanitas La Moraleja Hospital
- Graduate in Medicine from the Autonomous University of Madrid
- Specialty in Pediatric Surgery at Niño Jesús Hospital

### Dr. Domínguez, Eva

- Specialist in Pediatric Surgery at the San Carlos Clinical Hospital
- Specialist in Pediatrics at La Paz University Hospital
- Specialist in Pediatric Surgery at Quirón Madrid Hospital and Quirón San José Hospital
- Responsible for the teaching area and tutor of Pediatric Surgery residents at Niño Jesús Hospital
- Graduate in Medicine from the Complutense University of Madrid
- Specialty in Pediatric Surgery at La Paz Hospital
- Master's Degree in Evidence-Based Medicine from the National University of Distance Education
- Master's Degree in Clinical Management, Medical and Healthcare Management from the CEU Cardenal Herrera University

### Dr. Morante Valverde, Rocío

- Specialist in Pediatric Surgery at the 12 de Octubre Hospital
- Specialist in Pediatric Surgery at the de Donostia Hospital
- Graduate in Medicine from the University of Granada
- Specialty in Pediatric Surgery
- Master's Degree in Pediatric Urology
- Master's Degree in Minimally Invasive Surgery in Pediatrics

### Dr. Girón Vallejo, Óscar

- Head of the Pediatric Oncological Surgery Unit at Virgen de la Arrixaca Hospital
- Specialist in Pediatric Surgery at Puerta del Mar Hospital
- Lead investigator in the group "NK cell-tumor cell interaction model in highrisk neuroblastoma"
- Doctor of Medicine from the University of Cadiz
- Gradaute in Medicine from the University of Cadiz
- Specialty in Pediatric Surgery at Virgen de la Arrixaca Clinical University Hospital
- Fellow in Pediatric Laparoscopic Surgery at the Lapeyronie Center University Hospital
- Fellow in Pediatric Oncological Surgery at St. Jude Children's Research Hospital
- Member of Spanish Society of Pediatric Surgery, Spanish Association of Surgeons, Society of Pediatrics of Southeastern Spain, Spanish Society of Vascular Anomalies

### Dr. Molina Mata, María

- Specialist in Pediatric Oncologic Surgery at the Virgen del Rocio Hospital
- Graduate in Medicine from the University of Zaragoza
- Specialist in Pediatric Surgery at the Virgen del Rocío Hospital
- Master's in Pediatric Minimally Invasive Surgery by Cardenal Herrera CEU University
- Master's Degree in Pediatric Urology from the International University of Andalusia

## Course Management | 19 tech

#### Dr. Vázquez Rueda, Fernando

- Specialist in Pediatric Surgery
- Associate Professor in Health Sciences in the Pediatric Area
- Doctor of Medicine and Surgery from the University of Extremadura
- Graduate in Medicine and Surgery from the University of Seville Doctor of Medicine and Surgery from the University of Extremadura
- Specialty in Pediatric Surgery at Reina Sofia University Hospital
- Master's in Public Health and Health Management from the International School of Hospital Management
- Master's in Laparoscopic Surgery from the University of Cordoba
- Master's Degree in Molecular Oncology from the Rey Juan Carlos University
- Certification by the European Board of Pediatric Surgery

### Dr. Ibarra Rodríguez, María Rosa

- Pediatric Surgeon in the General Surgery and Pediatric Oncology Section of the Reina Sofia Hospital
- Graduate in Medicine and Surgery from the University of Cordoba
- Master's Degree in Pediatric Urology from the UNIA
- Master's in Minimally Invasive Surgery by TECH Technological University
- Practical stay at the Tawam Hospital in Abu Dhabi
- Practical stay at Memorial Sloan-Kettering Cancer Center in New York
- Member of ACPA: Pediatric Surgeons of Andalusia Association, SECIPE: Spanish Society of Pediatric Surgeons, SIOP: International Society of Pediatric Oncology, IPSO: International Society of Pediatric Surgical Oncology

### Dr. Mateos González, María Elena

- Coordinator of Pediatric Oncology at the Reina Sofia Hospital
- Researcher at the Maimonides Institute of Biomedical Research in Cordoba
- Doctor of Medicine from the Complutense University of Madrid
- Graduate in in Medicine from the University of Alcalá de Henares
- Master's Degree in Pediatric Oncology at the Complutense University of Madrid

Make the most of this opportunity to learn about the latest advances in this field in order to apply it to your daily practice"

# 04 Structure and Content

Since this is a dense syllabus, covering a large number of pediatric pathologies and cases of different types, TECH Global University has reinforced all the content through the pediatric methodology of *Relearning*. This means that key concepts are reinforced throughout the degree, resulting in a much more effective academic experience, without having to invest extensive hours of study time.

Delve into Neonatal and Pediatric Oncologic Surgery through a multitude of detailed videos, interactive summaries and practical analysis of real cases"

## tech 22 | Structure and Content

# **Module 1.** Pediatric Surgery. Surgical Patient Management Trauma. Robotics in Pediatric Surgery

- 1.1. Nutrition in the Surgical Child Assessment of Nutritional Status. Nutritional Requirements Special Nutrition: Enteral and Parenteral
  - 1.1.1. Calculation of Water and Electrolyte Requirements in Pediatrics
  - 1.1.2. Calculation of Caloric Needs in Pediatrics
    - 1.1.2.1. Nutritional Status Assessment
    - 1.1.2.2. Nutritional Requirements
  - 1.1.3. Nutrition in the Surgical Child
  - 1.1.4. Enteral Nutrition
    - 1.1.4.1. Indications and Contraindications
    - 1.1.4.2. Access Routes
    - 1.1.4.3. Routes of Administration
    - 1.1.4.4. Formulas
    - 1.1.4.5. Complications
  - 1.1.5. Parenteral Nutrition
    - 1.1.5.1. Indications and Contraindications
    - 1.1.5.2. Access Routes
    - 1.1.5.3. Composition
    - 1.1.5.4. Production
    - 1.1.5.5. Form of Administration
    - 1.1.5.6. Complications
- 1.2. Ethical Considerations in the Neonate and Pediatric Patient. Child Law
  - 1.2.1. Ethical Considerations in the Neonate and Pediatric Patient
    - 1.2.1.1. Ethics in Pediatric Practice
    - 1.2.1.2. Ethical Considerations in Pediatric Newborn Care
    - 1.2.1.3. Ethics and Clinical Research in Pediatrics
- 1.3. Palliative Care in Pediatric Surgery
  - 1.3.1. Palliative Care in Pediatrics. Ethical Aspects
  - 1.3.2. Bioethics in end-of-life Neonatology
    - 1.3.2.1. Decision-making in Neonatal Intensive Care Units
  - 1.3.3. Complex Chronic Patient
    - 1.3.3.1. Therapeutic Effort Limitation
    - 1.3.3.2. The Surgeon's Role

- 1.4. Child Trauma Evaluation and Initial Care of the Polytraumatized Child
  - 1.4.1. Activation Criteria of the Initial Care Team for Polytraumatized Patients (PPT)
  - 1.4.2. PPT Patient Care Room Preparation
  - 1.4.3. Staged Clinical Management of the PPT Patient
  - 1.4.4. Patient Transfer
  - 1.4.5. Primary Recognition and Initial Resuscitation
  - 1.4.6. Secondary Recognition
- 1.5. Hepatic, Splenic and Pancreatic Trauma Management in the Pediatric Patient
  - 1.5.1. Abdominal Trauma in Pediatric Patients
  - 1.5.2. Epidemiology
  - 1.5.3. Pediatric Abdomen. Features
  - 1.5.4. Etiopathogenesis and Classification1.5.4.1. Blunt Abdominal Trauma1.5.4.1.1. Direct Impact or Abdominal Compression
    - 1.5.4.1.2. Deceleration
  - 1.5.5. Open or Penetrating Abdominal Trauma
    - 1.5.5.1. Firearm
    - 1.5.5.2. Weapons
    - 1.5.5.3. Penetrating Impalement Wounds
  - 1.5.6. Diagnosis
    - 1.5.6.1. Clinical Examination
    - 1.5.6.2. Laboratory Tests
      - 1.5.6.2.1. Blood Count
      - 1.5.6.2.2. Urinalysis
      - 1.5.6.2.3. Biochemistry
      - 1.5.6.2.4. Cross-match Testing
    - 1.5.6.3. Imaging Tests
      - 1.5.6.3.1. Simple Abdominal X-ray
      - 1.5.6.3.2. Abdominal and FAST Ultrasound
      - 1.5.6.3.3. Abdominal CT Scan
    - 1.5.6.4. Peritoneal Lavage-Puncture

## Structure and Content | 23 tech

1.5.7. Treatment

- 1.5.7.1. Blunt Abdominal Trauma Treatment
- 1.5.7.1.1. Hemodynamically Stable Patients
- 1.5.7.1.2. Hemodynamically Unstable Patients
- 1.5.7.1.3. Conservative Approach in Solid Visceral Lesions
- 1.5.7.2. Open Abdominal Trauma Treatment
- 1.5.7.3. Embolization
- 1.5.8. Organ-Specific Injuries
  - 1.5.8.1. Bladder
  - 1.5.8.2. Liver
  - 1.5.8.3. Pancreas
  - 1.5.8.4. Hollow Visceral Injuries
    - 1.5.8.4.1. Stomach
    - 1.5.8.4.2. Duodenum
    - 1.5.8.4.3. Jejuno-ileum
    - 1.5.8.4.4. Large Intestine: Colon, Rectum and Sigmoid
  - 1.5.8.5. Diaphragmatic Injuries
- 1.6. Renal Trauma in Children
  - 1.6.1. Renal Trauma in Children
  - 1.6.2. Imaging Tests
  - 1.6.3. Retrograde Paleography, Percutaneous Nephrostomy and Perinephric Drainage Indications
  - 1.6.4. Renal Trauma Management
  - 1.6.5. Renal Vascular Injuries
  - 1.6.6. Trauma-Induced Renal Vascular Hypertension
  - 1.6.7. Chronic Post-Traumatic Low Back Pain
  - 1.6.8. Recommendations for Activities in Single-kidney Patients
  - 1.6.9. Disruption of the Pyeloureteral Union in Patients with Previous Hydronephrosis
  - 1.6.10. Urethral Trauma
- 1.7. Vesicourethral and Genital Trauma Management
  - 1.7.1. Bladder Trauma
    - 1.7.1.1. General Aspects
    - 1.7.1.2. Diagnosis
    - 1.7.1.3. Classification and Treatment

- 1.7.2. Urethral Trauma
  - 1.7.2.1. General Aspects
  - 1.7.2.2. Diagnosis
  - 1.7.2.3. Treatment
  - 1.7.2.4. Complications
- 1.7.3. Genital Trauma
  - 1.7.3.1. Penile Trauma
    - 1.7.3.2. Scrotal and Testicular Trauma
    - 1.7.3.3. Vulvar Trauma
- 1.8. Major Pediatric Outpatient Surgery
  - 1.8.1. Abdominal Wall Hernia
    - 1.8.1.1. Umbilical Hernia
    - 1.8.1.2. Epigastric Hernia
    - 1.8.1.3. Spiegel
    - 1.8.1.4. Lumbar
  - 1.8.2. Inguinal and Scrotal Region Hernia
    - 1.8.2.1. Direct and Indirect Inguinal Hernia
    - 1.8.2.2. Femoral Hernia
    - 1.8.2.3. Hydrocele
    - 1.8.2.4. Surgical Techniques
    - 1.8.2.5. Complications
  - 1.8.3. Cryptorchidism
  - 1.8.4. Testicular Anorchia
- 1.9. Hypospadias Phimosis
  - 1.9.1. Hypospadias
    - 1.9.1.1. Embryology and Penile Development
    - 1.9.1.2. Epidemiology and Etiology. Risk Factors
    - 1.9.1.3. Hypospadias Anatomy
    - 1.9.1.4. Classification and Clinical Assessment of Hypospadias. Associated Anomalies

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- 1.9.1.5. Treatment
  - 1.9.1.5.1. Reconstruction and Therapeutic Goal Indications
  - 1.9.1.5.2. Pre-operative Hormonal Treatment
  - 1.9.1.5.3. Surgical Defects. Repair in Short Time. Staged Reconstruction
- 1.9.1.6. Other Technical Aspects Bandages. Urinary Diversion
- 1.9.1.7. Immediate Postoperative Complications
- 1.9.1.8. Progress and Follow-up
- 1.9.2. Phimosis
  - 1.9.2.1. Incidence and Epidemiology
  - 1.9.2.2. Definition. Differential Diagnosis. Other Foreskin Alterations
  - 1.9.2.3. Treatment
    - 1.9.2.3.1. Medical Treatment
    - 1.9.2.3.2. Surgical Treatment. Preputialplasty and Circumcision
  - 1.9.2.4. Postoperative Complications and Sequels
- 1.10. Robotic Surgery in Pediatrics
  - 1.10.1. Robotic Systems
  - 1.10.2. Pediatric Procedures
  - 1.10.3. General Technique of Robotic Surgery in Pediatric Urology
  - 1.10.4. Surgical Procedures in Pediatric Urology Classified According to Localization 1.10.4.1. Upper Urinary Tract
    - 1.10.4.2. Pediatric Pelvic Surgery
  - 1.10.5. Surgical Procedures in Pediatric General Surgery
    - 1.10.5.1. Fundoplication
    - 1.10.5.2. Splenectomy
    - 1.10.5.3. Cholecystectomy

### Module 2. Pediatric Fetal and Neonatal Surgery

- 2.1. The Fetus as a Patient
  - 2.1.1. Prenatal Diagnosis. Mother and Fetus Management
  - 2.1.2. Video-endoscopic Fetal Surgery
  - 2.1.3. Fetal Problems Amenable to Prenatal Treatment

- 2.1.4. Ethical and Legal Considerations
- 2.1.5. Fetal and *Exit* Surgery
- 2.2. Pediatric Neonatal Surgery
  - 2.2.1. Functional and Structural Organization of the Pediatric Surgery Unit
  - 2.2.2. Neonatal Surgical Area Skills
  - 2.2.3. Neonatal Intensive Care Units Characteristics
  - 2.2.4. Surgery in Neonatal Units
- 2.3. Congenital Diaphragmatic Hernia (CDH)
  - 2.3.1. Embryology and Epidemiology
  - 2.3.2. Associated Anomalies Genetic Associations
  - 2.3.3. Pathophysiology. Pulmonary Hypoplasia and Hypertension
  - 2.3.4. Prenatal Diagnosis
    - 2.3.4.1. Prognostic Factors
    - 2.3.4.2. Prenatal Care
  - 2.3.5. Postnatal Resuscitation2.3.5.1. Medical and Ventilatory Treatment. ECMO
  - 2.3.6. Surgical Management
    - 2.3.6.1. Abdominal and Thoracic Approaches
    - 2.3.6.2. Open and Minimally Invasive
    - 2.3.6.3. Diaphragmatic Substitutes
  - 2.3.7. Evolution. Mortality
    - 2.3.7.1. Pulmonary Morbidity
    - 2.3.7.2. Neurological
    - 2.3.7.3. Digestive
    - 2.3.7.4. Osteomuscular
  - 2.3.8. Morgagni's Hernia or Anterior Diaphragmatic Hernia 2.3.8.1. Congenital Diaphragmatic Eventration
- 2.4. Esophageal Atresia Tracheoesophageal Fistula
  - 2.4.1. Embriology. Epidemiology
  - 2.4.2. Clinical Associated Anomalies. Classification
  - 2.4.3. Prenatal and Postnatal Diagnosis



## Structure and Content | 25 tech

2.4.4. Surgical Management 2.4.4.1. Pre-operative Bronchoscopy 2.4.5. Surgical approaches 2.4.5.1. Thoracotomy 2.4.5.2. Thoracoscopy 2.4.6. Long-gap Esophageal Atresia 2.4.6.1. Treatment Options 2.4.6.2. Elongation 2.4.7. Complications 2.4.7.1. Recurrence of Tracheoesophageal Fistula 2.4.7.2. Stenosis 2.4.8. After-effects 2.5. Congenital Abdominal Wall Defects 2.5.1. Gastroschisis. Incidence 2.5.1.1. Embryology 2.5.1.2. Etiology 2.5.1.3. Prenatal Management 2.5.2. Neonatal Resuscitation 2.5.2.1. Surgical Management 2.5.2.2. Primary Closure 2.5.2.3. Staged Closure 2.5.3. Associated Intestinal Atresia Treatment 2.5.3.1. Evolution 2.5.3.2. Intestinal Morbidity 2.5.4. Omphalocele 2.5.4.1. Incidence 2.5.4.2. Embryology 2.5.4.3. Etiology 2.5.5. Prenatal Management 2.5.5.1. Associated Anomalies

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2.5.5.2. Genetic Counseling

- 2.5.6. Neonatal Resuscitation
  - 2.5.6.1. Surgical Management
    - 2.5.6.2. Primary Closure
    - 2.5.6.3. Staged Closure
    - 2.5.6.4. Deferred Stage Closure
- 2.5.7. Short and Long-Term Evolution. Survival
- 2.6. Pyloric and Gastric Pathology in the Neonate
  - 2.6.1. Hypertrophic Pyloric Stenosis
    - 2.6.1.1. Etiology
    - 2.6.1.2. Diagnosis
  - 2.6.2. Surgical Approach 2.6.2.1. Open vs. Laparoscopy
  - 2.6.3. Pyloric Atresia
  - 2.6.4. Spontaneous Gastric Perforation
  - 2.6.5. Gastric Volvulus
  - 2.6.6. Gastric Duplication
- 2.7. Duodenal Obstruction
  - 2.7.1. Embryology 2.7.1.1. Etiology
  - 2.7.2. Epidemiology 2.7.2.1. Associated Anomalies
  - 2.7.3. Duodenal Atresia and Stenosis 2.7.3.1. Annular Pancreas
  - 2.7.4. Clinical Presentation
    - 2.7.4.1. Diagnosis
  - 2.7.5. Surgical Management
- 2.8. Congenital Intestinal Obstruction
  - 2.8.1. Jejunoileal Atresia and Stenosis
    - 2.8.1.1. Embryology
    - 2.8.1.2. Incidence
    - 2.8.1.3. Types

- 2.8.2. Clinical and Radiological Diagnosis2.8.2.1. Surgical Management2.8.2.2. Prognosis
- 2.8.3. Colic Atresia and Stenosis
- 2.8.4. Meconium Plug Syndrome 2.8.4.1. Left Colon Syndrome
- 2.8.5. Meconium Ileus
  - 2.8.5.1. Etiopathogenesis
  - 2.8.5.2. Genetics
  - 2.8.5.3. Cystic fibrosis
- 2.8.6. Simple and Complicated Meconium Ileus
- 2.8.7. Medical and Surgical Treatment
- 2.8.8. Complications
- 2.9. Minimally Invasive Neonatal Surgery
  - 2.9.1. Material and General Information
  - 2.9.2. Esophageal Atresia/Long-gap Esophageal Atresia
  - 2.9.3. Neonatal Diaphragmatic Pathology
  - 2.9.4. Duodenal Atresia
  - 2.9.5. Intestinal Atresia
  - 2.9.6. Intestinal Malrotation
  - 2.9.7. Neonatal Ovarian Cysts
  - 2.9.8. Other Specifications
- 2.10. Necrotizing Enterocolitis
  - 2.10.1. Epidemiology
    - 2.10.1.1. Pathophysiology
    - 2.10.2. Classification
      - 2.10.2.1. Prognostic Factors
  - 2.10.3. Clinical diagnosis 2.10.3.1. Differential Diagnosis
  - 2.10.4. Spontaneous Bowel Perforation
  - 2.10.5. Medical Treatment 2.10.5.1. Surgical Management
  - 2.10.6. Evolution. Prevention

## Structure and Content | 27 tech

## Module 3. Pediatric Oncological Surgery

- 3.1. Tumors in Pediatric Patients
  - 3.1.1. Epidemiology
  - 3.1.2. Etiology
  - 3.1.3. Diagnosis
  - 3.1.4. Tumor Staging
  - 3.1.5. Therapeutic Principles: Surgery, Chemotherapy, Radiotherapy and Immunotherapy
  - 3.1.6. Future Therapies and Challenges
- 3.2. Wilms Tumor. Other Renal Tumors
  - 3.2.1. Wilms Tumor
    - 3.2.1.1. Epidemiology
    - 3.2.1.2. Clinical Symptoms
    - 3.2.1.3. Diagnosis
    - 3.2.1.4. Staging. Umbrella Protocol
    - 3.2.1.5. Treatment
    - 3.2.1.6. Prognosis
  - 3.2.2. Other Renal Tumors
    - 3.2.2.1. Clear Cell Sarcoma
    - 3.2.2.2. Rhabdoid Tumor
    - 3.2.2.3. Renal Cell Carcinoma
    - 3.2.2.4. Congenital Mesoblastic Nephroma
    - 3.2.2.5. Cystic Nephroma
    - 3.2.2.6. Partially Differentiated Cystic Nephroblastoma
- 3.3. Neuroblastoma
  - 3.3.1. Epidemiology
  - 3.3.2. Histopathology and Classification Molecular Biology
  - 3.3.3. Clinical Presentation. Syndromes Associated
  - 3.3.4. Diagnostics: Laboratory and Imaging Techniques
  - 3.3.5. Staging and Risk Group
  - 3.3.6. Multidisciplinary Treatment: Chemotherapy, Surgery, Radiotherapy, Immunotherapy. New Strategies
  - 3.3.7. Response Evaluation
  - 3.3.8. Prognosis

- 3.4. Benign and Malignant Liver Tumors
  - 3.4.1. Diagnosis of Liver Masses
  - 3.4.2. Benign Hepatic Tumors
    - 3.4.2.1. Hepatic Hemangioma in Infancy
    - 3.4.2.2. Mesenchymal Hamartoma
    - 3.4.2.3. Focal Nodular Hyperplasia
    - 3.4.2.4. Adenoma
  - 3.4.3. Malignant Liver Tumors
    - 3.4.3.1. Hepatoblastoma
    - 3.4.3.2. Hepatocellular Carcinoma
    - 3.4.3.3. Hepatic Angiosarcoma
    - 3.4.3.4. Other Hepatic Sarcomas
- 3.5. Pediatric Sarcomas
  - 3.5.1. Initial Classification
  - 3.5.2. Rhabdomyosarcomas
    - 3.5.2.1. Epidemiology
    - 3.5.2.2. Risk Factors
    - 3.5.2.3. Histopathology
    - 3.5.2.4. Clinical Symptoms
    - 3.5.2.5. Diagnosis
    - 3.5.2.6. Staging
    - 3.5.2.7. Treatment
    - 3.5.2.8. Prognosis
  - 3.5.3. Non-rhabdomyosarcoma
    - 3.5.3.1. Synovial Sarcoma
    - 3.5.3.2. Infantile fibrosarcoma
    - 3.5.3.3. Malignant Peripheral Nerve Sheath Tumor, Malignant Schwannoma or Neurofibrosarcoma

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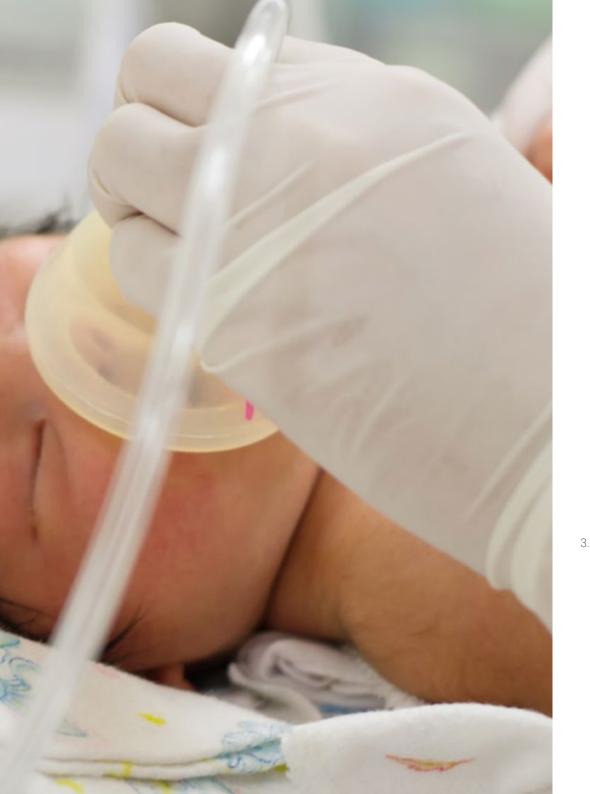
3.6.

3.5.3.4. Dermatofibrosarcoma Protuberans 3.5.3.5. Desmoplastic Small Round Cell Tumor 3.5.3.6. Liposarcomas 3.5.3.7. Leiomyosarcoma 3.5.3.8. Angiosarcoma 3.5.3.9. Solitary Fibrous Tumor 3.5.3.10. Undifferentiated Soft Tissue Sarcoma 3.5.3.11. Inflammatory Myofibroblastic Sarcoma 3.5.3.12. Others 3.5.4. Bone Sarcomas of Extraosseous Location Gonadal Tumors 3.6.1. Testicular Tumors 3.6.1.1. Epidemiology 3.6.1.2. Clinical Symptoms 3.6.1.3. Diagnosis 3.6.1.4. Analytical Determinations Tumor Markers 3.6.1.5. Imaging Tests 3.6.1.6. Staging 3.6.1.7. Classification 3.6.1.8. Treatment 3.6.1.9. Prognosis 3.6.1.10. Histopathology 3.6.1.11. Germ Cell Tumors 3.6.1.12. Stromal Tumors 3.6.1.13. Metastatic Tumors 3.6.1.14. Paratesticular Tumors 3.6.2. Ovarian Tumors 3.6.2.1. Epidemiology 3.6.2.2. Clinical Symptoms 3.6.2.3. Diagnosis

3.6.2.4. Analytical Determinations Tumor Markers



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3.6.2.5. Imaging Tests 3.6.2.6. Staging 3.6.2.7. Classification 3.6.2.8. Treatment 3.6.2.9. Prognosis 3.6.2.10. Histopathology 3.6.2.11. Mature Teratoma 3.6.2.12. Gonadoblastoma 3.6.2.13. Immature Teratoma 3.6.2.14. Endodermal sinus tumor 3.6.2.15. Choriocarcinoma 3.6.2.16. Embryonal Carcinoma 3.6.2.17. Dysgerminoma 3.6.2.18. Mixed Germ Cell Tumors 3.6.3. Fertility Preservation in Pediatric Oncology Patients 3.6.3.1. Gonadotoxic Treatments 3.6.3.2. Chemotherapy 3.6.3.3. Radiotherapy 3.6.3.4. Preservation Techniques 3.6.3.5. Ovarian Suppression 3.6.3.6. Oophoropexy or Ovarian Transposition 3.6.3.7. Ovarian Cryopreservation 3.6.4. Combined Technique 3.7. Surgical assistance in pediatric hemato-oncology 3.7.1. Pediatric Hematooncologic Diseases for the Pediatric Surgeon 3.7.2. Biopsies 3.7.2.1. Types 3.7.2.2. Incisional and Excisional Biopsy Techniques

3.7.2.3. Tru-cut

3.7.2.4. Coaxial Needle

## tech 30 | Structure and Content

3.7.2.5. Ultrasound for Biopsy in Pediatric Oncology

- 3.7.3. Enteral and Parenteral Nutrition in the Oncology Patient
- 3.7.4. Vascular Access
  - 3.7.4.1. Classification
  - 3.7.4.2. Ultrasound-guided Placement Technique for Vascular Accesses
- 3.7.5. Surgical Emergencies in the Immunocompromised Patient: Neutropenic Enterocolitis. Hemorrhagic Cystitis
- 3.8. Bone Tumors
  - 3.8.1. Classification

3.8.1.1. Benign Bone Tumors 3.8.1.1.1. Epidemiology 3.8.1.1.2. Clinical Manifestations 3.8.1.1.3. Histological Diagnosis and Classifications 3.8.1.1.3.1. Bone Tumors 3.8.1.1.3.2. Cartilaginous Tumors 3.8.1.1.3.3. Fibrous Tumors 3.8.1.1.3.4. Bone Cysts 3.8.1.2. Malignant Bone Tumors 3.8.1.2.1. Introduction 3.8.1.2.2. Ewing Sarcoma 3.8.1.2.2.1. Epidemiology 3.8.1.2.2.2. Clinical Symptoms 3.8.1.2.2.3. Diagnosis 3.8.1.2.2.4. Treatment 3.8.1.2.2.5. Prognosis 3.8.1.2.3. Osteosarcoma 3.8.1.2.3.1. Epidemiology 3.8.1.2.3.2. Clinical Symptoms 3.8.1.2.3.3. Diagnosis 3.8.1.2.3.4. Treatment 3.8.1.2.3.5. Prognosis

3.9. Teratoma

3.9.1. Extragonadal Germ Cell Tumors: General Information





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- 3.9.2. Mediastinal Teratomas
- 3.9.3. Retroperitoneal Teratomas
- 3.9.4. Sacrococcygeal Teratomas
- 3.9.5. Other Locations
- 3.10. Endocrine Tumors
  - 3.10.1. Adrenal Gland Tumors: Pheochromocytoma
    - 3.10.1.1. Epidemiology
    - 3.10.1.2. Genetics
    - 3.10.1.3. Presentation and Assessment
    - 3.10.1.4. Treatment
    - 3.10.1.5. Prognosis
  - 3.10.2. Thyroid tumors
    - 3.10.2.1. Epidemiology
    - 3.10.2.2. Genetics
    - 3.10.2.3. Clinical Symptoms
    - 3.10.2.4. Diagnostics: Imaging and Cytological
    - 3.10.2.5. Preoperative Endocrinologic Management, Surgical Intervention, Postoperative Management and Adjuvant Treatments
    - 3.10.2.6. Complications
    - 3.10.2.7. Postoperative Staging and Categorization
    - 3.10.2.8. Follow-up According to Staging

# 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"

## tech 34 | Methodology

## 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.



## tech 36 | Methodology

## **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.



## Methodology | 37 tech

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.



## tech 38 | Methodology

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.

20%

15%

3%

15%

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.

## Methodology | 39 tech



### **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.

20%

7%

3%

17%



### **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 Neonatal and Pediatric Surgical Oncology guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma 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"

## tech 42 | Certificate

This program will allow you to obtain your **Postgraduate Diploma in Neonatal and Pediatric Surgical Oncology** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra (*official bulletin*). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

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

Title: Postgraduate Diploma in Neonatal and Pediatric Surgical Oncology

Modality: online

Duration: 6 months

Accreditation: 18 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.

tecn global university Postgraduate Diploma Neonatal and Pediatric Surgical Oncology » Modality: online » Duration: 6 months » Certificate: TECH Global University

- » Credits: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Postgraduate Diploma Neonatal and Pediatric Surgical Oncology

