

# Postgraduate Diploma Fetal and Pediatric Cardiovascular Physiology





## Postgraduate Diploma Fetal and Pediatric Cardiovascular Physiology

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

Website: [www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-fetal-pediatric-cardiovascular-physiology](http://www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-fetal-pediatric-cardiovascular-physiology)

# Index

01

Introduction

---

*p. 4*

02

Objectives

---

*p. 8*

03

Course Management

---

*p. 12*

04

Structure and Content

---

*p. 16*

05

Methodology

---

*p. 20*

06

Certificate

---

*p. 28*

# 01

# Introduction

Fetal and Pediatric Cardiovascular Physiology has been studied since the second half of the 20th century. This is a complex field and one in which modern medicine has not yet made significant advances compared to the same specialty in adults. This is because the causes of many of the malformations during gestation are still unknown, as well as the pathologies derived from them, such as cardiomyopathies or arrhythmias. However, thanks to the exhaustive work of a group of professionals in the pediatric cardiology field, TECH has put together a program that includes the most complete and up-to-date information in this field. In this way, professionals will be able to update themselves on the main cardiovascular pathologies that affect unborn children or infant patients, as well as on the general bases of their condition through a 100% online program that will allow them to make a reliable contribution to the advancement of science.



“

*A rigorous and exhaustive program that allows specialists to keep up to date with the latest developments in Fetal and Pediatric Cardiology in only 6 months and 100% online”*



The early diagnosis of pathologies related to the cardiac field is fundamental, since this is a complex area that causes the most deaths each year worldwide. In the specific case of fetuses, newborns and pediatric patients of different ages, Cardiology has developed a series of techniques and clinical strategies to work on the analysis, management, treatment and prevention of diseases such as congenital heart disease, arrhythmias or problems in the mitral, tricuspid, pulmonary and aortic valves, among others. Thanks to the few but exhaustive advances that have been made in this field, it is now possible to assist both unborn babies, newborns and older children, contributing not only to improve their health, but sometimes even to save their lives.

For this reason, and given the very important role that pediatric cardiologists play in this type of clinical cases, TECH has developed this Postgraduate Diploma in Fetal and Pediatric Cardiovascular Physiology with the aim of bringing them up to date on the advances that have been made in this field. Therefore, over a period of 6 months, they will be able to work on the latest information related to the correct cardiocerebral development in fetuses, their characteristics and the techniques for approaching the different diseases that may affect them. They will also be able to update their knowledge in relation to heart diseases, cardiomyopathies and tumors, through an intensive in-depth study of the general bases of the specialty and the changes that have recently occurred with respect to treatments, diagnostic tools and intervention.

For this purpose, they will have 450 hours of diverse material, in addition to the syllabus, which includes: clinical cases based on real situations, research articles, complementary readings, news, dynamic summaries, self-knowledge exercises and much more! All presented in a convenient and flexible 100% online format that can be accessed from any device with internet connection, giving them the opportunity to update their knowledge from wherever they want and whenever they want, without schedules or on-site classes.

This **Postgraduate Diploma in Fetal and Pediatric**

**Cardiovascular Physiology** contains the most complete and up-to-date scientific program on the market. Its most notable features are:

- ♦ The development of practical cases presented by experts in Pediatric Cardiology
- ♦ 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 assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



*Thanks to the very high level of this program, you will be able to perfect your skills in the clinical management of child patients of different ages with arrhythmias or cardiac tumors"*

“

*You will have access to 450 hours of the best and most varied theoretical, practical and additional content to delve into the most innovative aspects of congenital heart disease or myocarditis”*

The program includes, in its teaching staff, professionals from the sector who bring to this program the experience of their work, in addition to recognized specialists from prestigious reference societies and universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise throughout the program. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

*Would you like to update your medical practice for the clinical management of pericarditis in children? Choose this program and you are guaranteed to get up to date.*

*The perfect program to delve into advances in arrhythmias in the fetal and pediatric age through a program designed by and for specialists of the highest medical level.*



# 02 Objectives

The importance of Pediatric Cardiology and the role played by its specialists in the early and accurate diagnosis of the different pathologies that most frequently affect fetuses and pediatric patients is what has led TECH Technological University to develop this program. Therefore, the objective is to provide students with all the information they need to update their knowledge in relation to the general bases of the different diseases (arrhythmias, cardiopathies, cardiomyopathies and tumors, among others), as well as to provide them with the best teaching material to help them achieve this in less than 6 months and with guaranteed results.







“

*A program that will provide you with the latest information necessary to improve your professional skills and to become a more proactive life saver”*



## General Objectives

---

- Provide students with the latest and most exhaustive information related to Fetal and Pediatric Cardiovascular Physiology.
- Develop a broad, specialized and up-to-date knowledge of the diagnostic tools and therapeutic approach to the most frequent cardiac diseases in fetuses and pediatric patients.



*A program designed by and for experts in the medical field that, without a doubt, will allow you to reach your professional goals through an innovative and novel practice, but, above all, an effective one"*





## Specific Objectives

---

### Module 1. Fetal Cardiology

- ◆ Define the appropriate evaluation and treatment of a new-born with heart disease
- ◆ Master prenatal *screening* Indications for Fetal Echocardiography
- ◆ Distinguish the types of cardiac malformations
- ◆ Study labor preparation and perinatal management

### Module 2. Heart Disease, Cardiomyopathies, Tumors

- ◆ Study the basic aspects of invasive cardiology essential for clinical cardiology professionals
- ◆ Specialize in Kawasaki disease
- ◆ Differentiate myocarditis and cardiomyopathy

### Module 3. General Basis of Arrhythmias in Fetal and Pediatric Age Group

- ◆ Review the current status for dealing with different arrhythmias that could occur in fetuses, breastfeeding infants and children, with their clinical and invasive aspects as well as the use of devices.
- ◆ Master the antiarrhythmic pharmacology
- ◆ Distinguish the different types of supraventricular tachycardias
- ◆ Master the correct handling of the defibrillation test

03

# Course Management

The teaching staff of this Postgraduate Diploma in Fetal and Pediatric Cardiovascular Physiology is composed of a team of medical professionals specialized in the treatment of unborn children and children with diseases such as heart disease, arrhythmias, cardiomyopathies and heart tumors. Thanks to their long and extensive experience in the field, they are highly experienced in the clinical management of these patients and know the best and most effective strategies to treat them. All this will be reflected in this program's syllabus, which they have actively collaborated in designing.







“

*The teaching team has selected clinical cases from their own practices so that students can work on perfecting their skills in a practical way”*



## Management



### Dr. Gutiérrez Larraya, Federico

- ♦ Head of the Pediatric Cardiology at La Paz University Hospital Madrid, Spain
- ♦ Head of the Pediatric Cardiology at Ruber International Hospital Madrid, Spain
- ♦ Associate Professor of Medicine at the Complutense University of Madrid.
- ♦ PhD in Medicine from the Complutense University of Madrid.
- ♦ Degree in Medicine and Surgery from the Complutense University of Madrid
- ♦ Resident in Pediatric and Interventional Cardiology at the Children's Hospital of The King's Daughters. Virginia, United States
- ♦ Master's Degree in Health Management and Economics from the European Institute of Health and Social Welfare.
- ♦ Executive Master's Degree in Healthcare Organization Management by ESADE
- ♦ President of the Permanent Management Committee at La Paz Children's University Hospital. Madrid, Spain



### Dr. Merino Llorens, José Luís

- ♦ Head of the Arrhythmia and Robotized Cardiac Electrophysiology Unit at La Paz University Hospital.
- ♦ Cardiologist-electrophysiologist at Quirón Ruber Juan Bravo Hospital
- ♦ Cardiologist-electrophysiologist at Nisa Pardo de Aravaca Hospital
- ♦ Principal investigator in several international multicenter studies
- ♦ Author of hundreds of scientific articles on his medical specialty
- ♦ President of the Electrophysiology and Arrhythmias Department of the Spanish Society of Cardiology
- ♦ Chairman of the Cardiac Rhythm Committee of the European Society of Cardiology
- ♦ PhD in Medicine from the Complutense University of Madrid.
- ♦ Master's Degree in Healthcare Unit Management from ESADE
- ♦ Award for the best scientific communication on Arrhythmias and Electrophysiology at the Congress on Cardiovascular Diseases



## Professors

### Dr. Deiros Bronte, Lucía

- ◆ Pediatric and Fetal Cardiologist at La Paz University Hospital
- ◆ Author of several articles published in scientific journals
- ◆ Teacher in university studies
- ◆ Doctorate in Medicine from the Autonomous University Madrid

### Dr. Ortega Molina, Marta

- ◆ Cardiologist in the Arrhythmia Unit of the Children's Hospital La Paz
- ◆ Specialist in Pediatric Cardiology in the Congenital Heart Disease Unit of the HM Montepíncipe Hospital
- ◆ Specialist in Pediatric Cardiology at Móstoles University Hospital
- ◆ Specialist in Pediatric Cardiology at Quirónsalud San José Hospital.
- ◆ Degree in Medicine and Surgery from the Autonomous University of Madrid.
- ◆ Specialty in Pediatric Cardiology at the 12 de Octubre University Hospital
- ◆ Master's Degree in Cardiac Electrophysiology from CEU San Pablo University
- ◆ Research Fellow in Pediatric Electrophysiology and Congenital Cardiopathology at Children's Hospital Boston (London)



*A path to achieve knowledge and professional growth that will propel you towards a greater level of competitiveness in the job market"*

# 04

## Structure and Content

Developing this 100% online Postgraduate Diploma has been a real challenge for TECH Technological University and its team, who, despite being experts in Pediatric Cardiology, have had to carry out an exhaustive research task in order to create a complete, up-to-date program adapted to the pedagogical criteria that define and differentiate this university. In addition, with an emphasis on the multidisciplinary factor that characterizes all the qualifications of this center, they have also included in their content hours of additional material in audiovisual format, research articles, dynamic summaries and complementary readings so that the graduate can take full advantage of this educational experience and delve into the most relevant aspects of the syllabus for their professional performance.





“

*A dynamic and intensive study plan that will allow you to advance through the latest developments in Fetal and Pediatric Cardiovascular Physiology without even realizing it, updating your knowledge in a natural and progressive way"*

## Module 1. Fetal Cardiology

- 1.1. Physiology of Fetal Circulation and Normal Transition
- 1.2. Cardiocerebral Development
- 1.3. Genetics
- 1.4. Prenatal Screening Indications for Fetal Echocardiograph
- 1.5. Acute Heart Failure
- 1.6. Heart Malformations
  - 1.6.1. Septal Defects
  - 1.6.2. Conotruncal Defects
  - 1.6.3. Right and Left Heart Failure
  - 1.6.4. Coarctation of Aorta
- 1.7. Fetal Arrhythmias
- 1.8. Preparation of Birth and Perinatal Management
  - 1.8.1. Obstetric Management
  - 1.8.2. Management of the New-born
- 1.9. Fetal Interventionism

## Module 2. Heart Disease, Cardiomyopathies, Tumors

- 2.1. Congenital Heart Disease
  - 2.5.1. Introduction
  - 2.5.2. Non-Cyanogenic Heart Disease
  - 2.5.3. Cyanogenic Heart Disease
- 2.2. Myocarditis and Cardiomyopathy
- 2.3. Pericarditis, Endocarditis and Kawasaki Disease
- 2.4. Cardiologic Involvement in Pediatric Systemic Diseases







### Module 3. General Basis of Arrhythmias in Fetal and Pediatric Age Group

- 3.1. General Bases: Cellular and Cardiac Electrophysiology
  - 3.1.1. Anatomy and Embryology of the Conduction System
  - 3.1.2. Normal and Pathological ECG
  - 3.1.3. Changes During Development
  - 3.1.4. The Normal Patient With a Structurally Abnormal Heart
- 3.2. Canalopathies
- 3.3. Genetics of Arrhythmic Disorders
- 3.4. Preexcitation Clinical Management
- 3.5. Supraventricular Tachycardias I (AV re-entry and intranodal)
- 3.6. Supraventricular Tachycardias II (focal atrial, re-entrant and atrial fibrillation)
- 3.7. Ventricular Tachycardias
- 3.8. Bradycardias and Blockages
- 3.9. Invasive EPS, Endocavitary Recordings Equipment: Electroanatomical Mapping, RF Ablation, Cryoablation
- 3.10. Syncope and Sudden Death
- 3.11. Antiarrhythmic Pharmacology
- 3.12. Perioperative Arrhythmias
- 3.13. Temporary and Definitive Stimulation
- 3.14. IAD Defibrillation Test



*The time has come to make a decision that will mark your future as a physician. Are you betting on a top-level program that will undoubtedly help you increase your chances of clinical success?"*

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 assess 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

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

*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 prepared with unprecedented success in all clinical specialties regardless of surgical load. Our educational methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

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

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.



This program offers the best educational material, prepared with professionals in mind:



#### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then adapted in 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 assess and re-assess 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

This Postgraduate Diploma in Fetal and Pediatric Cardiovascular Physiology guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.





“

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

This **Postgraduate Diploma in Fetal and Pediatric Cardiovascular Physiology** 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 diploma 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 Fetal and Pediatric Cardiovascular Physiology**

Official N° of Hours: **450 hours**.



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



## Postgraduate Diploma Fetal and Pediatric Cardiovascular Physiology

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



# Postgraduate Diploma

## Fetal and Pediatric Cardiovascular Physiology

