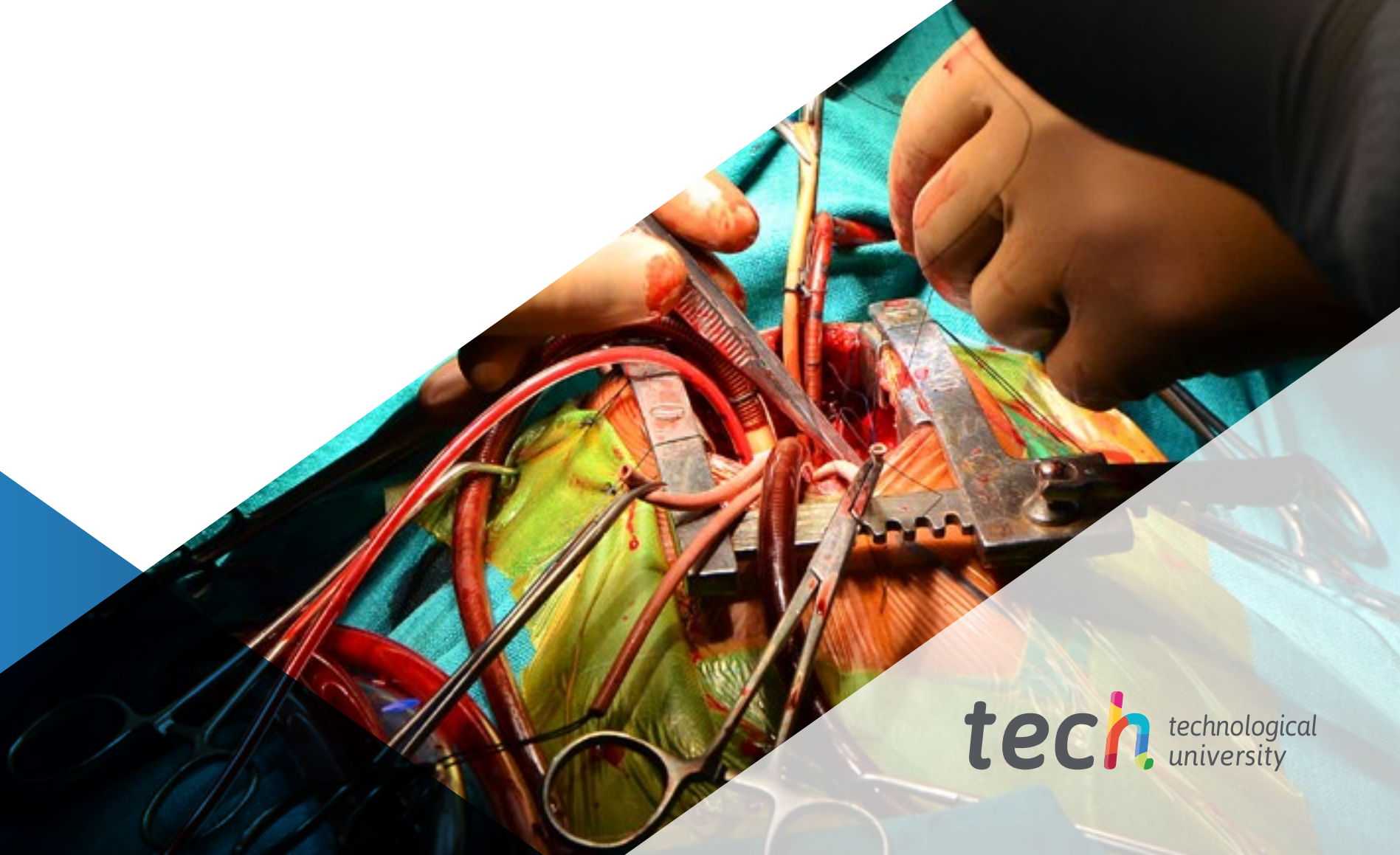


Postgraduate Diploma

Congenital Heart Disease Surgery





Postgraduate Diploma Congenital Heart Disease Surgery

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

Website: www.techtute.com/pk/medicine/postgraduate-diploma/postgraduate-diploma-congenital-heart-disease-surgery

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01

Introduction

Despite the high levels of technological evolution at present, even in the 21st century there are still limitations in detecting most cardiac malformations before birth. As well as those adults who have been detected late or who did not have adequate treatment at the time of diagnosis. Worldwide, it is estimated that there are between 8 and 10 cases per 1000 births. Therefore, studies on this subject should continue to evolve. This program has been created with the aim of providing an overview of the vast world of congenital heart disease through a detailed review of the most common pathologies and the latest techniques for their surgical approach. Through the most innovative methodology of the current university environment and a 100% online study system, to achieve the degree in a few months.





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It determines precisely and according to new techniques, which is the best moment for surgery, according to each type of congenital heart disease"

Advances in the diagnosis and treatment of congenital heart disease have significantly changed the pattern of survival of these patients. Some patients reach adulthood without surgical treatment because they did not require surgery at the time of diagnosis or throughout their evolution, or simply because there was no treatment at the time of diagnosis. Then there is the high number of cases that are diagnosed from pregnancy or birth, thanks to constant technological advances, and must be treated quickly.

Whatever the case, studies of congenital heart disease should continue to improve the quality of life of individuals and find accurate and efficient solutions at the present time. It is for this reason that TECH has brought together a large team of professionals from different areas of cardiac surgery to share their clinical expertise on this urgent issue. Thanks to its wide experience, multidisciplinary and high-level scientific contribution, this program is the best academic offer to get up to date in everything related to the surgical approach to Congenital Heart Disease, perioperative care and the Anatomy and Physiopathology of the Cardiovascular System.

Knowing the difficulty that the specialist has when taking on a title of these characteristics, TECH offers it in a completely online format. This means that there are neither fixed classes nor fixed schedules, being the specialist themselves the one who decides where and how to face the teaching load. The virtual classroom is accessible 24 hours a day from any device with an internet connection, and the contents can even be downloaded for later offline consultation.

The **Postgraduate Diploma in Congenital Heart Disease Surgery** contains the scientific most complete and up-to-date educational program on the market. The most important features include:

- ♦ Practical cases presented by experts in Cardiac Surgery
- ♦ 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 the self-assessment process can be carried out to improve learning
- ♦ Its special emphasis on innovative methodologies
- ♦ Theoretical lessons, questions for experts and individual reflection work
- ♦ Access to content from any fixed or portable device with an Internet connection



You will be assisted at all times by TECH's professional team. To advance quickly and efficiently in each module"

“

This new social reality demands a new way of learning. TECH has everything you need to provide you with the best educational experience”

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

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive training programmed to train 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.

Get updated on the most modern and efficient methods to address and correct congenital heart disease.

Access the latest scientific postulates on Congenital Heart Surgery.



02 Objectives

The main objective of this degree is to offer the cardiac surgeon a complete and exhaustive update on the tools necessary to develop skills and knowledge in the medical and surgical management of patients with congenital heart disease. For this, in addition to having a great professional teaching team, TECH has employed the latest educational technology and the most successful pedagogical methods. This guarantees a smooth and efficient academic experience, where even before completion the specialist incorporates all the updated knowledge into his daily practice.





“

You will achieve your most ambitious goals and objectives thanks to TECH, the largest online university in Spanish in the world"



General Objectives

- Deepen the knowledge of all cardiac diseases and their forms of treatment
- Broaden the knowledge and understanding of extracorporeal circulation as a whole
- Analyze the importance of new technologies involved in the management and control of cardiac pathologies and imaging techniques
- Obtain the necessary knowledge to improve patient recovery, avoid complications and reduce mortality
- Obtain the most updated knowledge to approach comprehensively and from the surgical point of view, as appropriate all valvular pathologies, ischemic heart, aortic pathology and congenital heart diseases
- Deepen in the treatment of other cardiac pathologies, transcatheter valve implantation and concomitant diseases





Specific Objectives

Module 1. Anatomy and Pathophysiology of the Cardiovascular System

- ♦ Study embryology to understand the origin of cardiac anatomy
- ♦ Outline the basic aspects of the pathophysiology of the heart
- ♦ In-depth study of the conduction system, coronary anatomy, great vessels and peripheral vascular system
- ♦ Deepen in the knowledge of all cardiac diseases
- ♦ Analyze hemostasis and the different pathways of blood coagulation
- ♦ Know the new trends in cardiovascular pharmacology

Module 2. Preoperative Care

- ♦ Deepen the knowledge of all perioperative measures and strategies
- ♦ Update the knowledge of all perioperative measures and strategies
- ♦ Understand ways to improve for optimal recovery of the surgical patient
- ♦ Learn more about the techniques to be applied before the operation, to avoid complications and reduce mortality
- ♦ Achieve more efficient postoperative control
- ♦ Reduce transfusions of blood products as much as possible

Module 3. Congenital Heart Disease

- ♦ Provide an overview of congenital heart disease through a detailed review of the most common pathologies
- ♦ Study the physiology of congenital heart diseases in order to group them according to their physiological behavior
- ♦ Make an anatomical description of each group of anomalies
- ♦ Verify the different surgical options to correct congenital cardiopathies
- ♦ Evaluate the best time to correct congenital heart disease



A modern and secure virtual campus will be the study center for your next update in Congenital Heart Surgery. Start now"

03

Course Management

Like other branches of medicine, Congenital Heart Surgery requires a constant effort on the part of the specialist to update their knowledge, the faculty of this program has been composed of a group of professionals of great academic and clinical value. This gives the program a unique vision that combines the most effective practical techniques with the most modern scientific postulates on congenital heart disease through a detailed review of the most frequent pathologies.





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Reputed professionals in the area under study, with extensive experience and prestige, will be in charge of guiding you through this updating process"

Management



Dr. Rodríguez-Roda, Jorge

- ◆ Head of Cardiac Surgery Service by competitive examination. Ramón y Cajal University Hospital
- ◆ Cardiac Surgeon of the Cardiac Surgery Unit. Montepíncipe Madrid Hospital HM Group
- ◆ Professor Collaborating in the Department of Surgery. Alcalá de Henares University
- ◆ Assistance Coordinator of the Cardiovascular Surgery Service. Gregorio Marañón General University Hospital
- ◆ Assistant Physician of Cardiovascular Surgery at General UH Gregorio Marañón, Hospital Central de la Defensa Gómez Ulla and Hospital del Aire, Madrid
- ◆ Resident physician of the Cardiovascular Surgery specialty in the Cardiovascular and Thoracic Surgery Service. Puerta de Hierro University Hospital. Madrid
- ◆ Medical Officer of the Common Bodies of Defense
- ◆ Member of important scientific committees in Europe, Speaker and moderator of a variety of congresses and events related to cardiac surgery
- ◆ Author and contributor to countless publications, journals and books aimed at the medical community related to cardiac surgery

Professors

Dr. Varela Barca, Laura

- ♦ Resident Intern at the Adult Cardiac Surgery Department of the Ramón y Cajal University Hospital of Madrid
- ♦ Attending Physician of the Adult Cardiac Surgery Service of the Son Espases University Hospital of Palma de Mallorca
- ♦ Attending Physician, Cardiac Surgery Department, Fundación Jiménez Díaz University Hospital
- ♦ D. from the University of Alcalá de Henares in Health Sciences
- ♦ Degree in Medicine from the - Faculty of Medicine at the University of Valladolid
- ♦ Master's Degree in Cardiovascular Emergences from the University Alcalá de Henares

Dr. Martin, Miren

- ♦ Cardiovascular Surgery Specialist. Ramón y Cajal University Hospital
- ♦ Resident Intern Doctor Ramón y Cajal University Hospital
- ♦ Bachelor of Medicine and Surgery Degree entity. University of the Basque Country
- ♦ Master in Cardiac Surgery Minimum access. University of Malaga
- ♦ Master's Degree in Cardiovascular Emergencies. University of Alcalá
- ♦ Specialization in Clinical Research Methodology for Residents. University of Alcalá
- ♦ Specialist in Cardiovascular Surgery. Ramón y Cajal University Hospital

Dr. Pérez-Caballero Martínez, Ramón

- ♦ Pediatric Cardiovascular Surgery Assistant. Gregorio Marañón General University Hospital
- ♦ Adjunct at the Children's Cardiovascular Surgery Unit (Dr. R. Greco). Sanitas La Zarzuela Hospital
- ♦ Adjunct at the Children's Cardiovascular Surgery Unit (Dr. R. Greco). Sanitas La Moraleja Hospital
- ♦ Adjunct at the Children's Cardiovascular Surgery Unit (Dr. R. Greco). Nisa Pardo de Aravaca Hospital
- ♦ Adjunct at the Children's Cardiovascular Surgery Unit (Dr. R. Greco). Quirón Pozuelo Hospital
- ♦ Pediatric Cardiac Surgery Assistant. Pediatric Heart Institute. Doce de Octubre University Hospital
- ♦ PhD in Surgery from the Complutense University of Madrid
- ♦ Degree in Medicine and Surgery from the Faculty of Medicine of Santander. University of Cantabria
- ♦ Specialist in Cardiovascular Surgery. Gregorio Marañón General University Hospital
- ♦ Honorary Collaborator of the Department of Surgery I at the Complutense University
- ♦ Diploma of Advanced Studies. Synchronized ventricular assistance
- ♦ He has numerous publications in the area of cardiac surgery and transplantation in pediatrics

04

Structure and Content

This Postgraduate Diploma in Congenital Heart Surgery consists of 3 modules that are distributed in a variety of written and audiovisual formats, based on the most advanced methodology of the current university environment, which allows the rapid learning of concepts and their easy understanding. Through a variety of multimedia and interactive resources, the student perceives dynamism in a comfortable development and follow-up, from any device with internet connection. With the contents available from day one, including for download.



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Thanks to the variety of tools that the TECH platform offers you, the teaching load becomes lighter and easier to understand"

Module 1. Anatomy and Pathophysiology of the Cardiovascular System

- 1.1. Embryology
- 1.2. Anatomy
 - 1.2.1. Cardiac Cavities
 - 1.2.2. Atrial Septum and Interventricular Septum
 - 1.2.3. Heart Valves
- 1.3. Biochemistry of the Heart
 - 1.3.1. Metabolic Regulation
 - 1.3.2. Regulation of Oxygen Consumption
 - 1.3.3. Plasma Lipoproteins
- 1.4. Conduction System
- 1.5. Coronary Anatomy and Coronary Pathophysiology
- 1.6. Large Vessels and Peripheral Vascular System
- 1.7. Physiology of the Cardiovascular Apparatus
- 1.8. Anatomophysiology of the Pulmonary Circulation
- 1.9. Hemostasis and Blood Coagulation
- 1.10. Update on Cardiovascular Pharmacology

Module 2. Preoperative Care

- 2.1. Preoperative Optimization
 - 2.1.1. Risk Assessment
 - 2.1.2. Nutritional Status
 - 2.1.3. Anaemia
 - 2.1.4. Diabetes Mellitus
 - 2.1.5. ATB Prophylaxis
- 2.2. Intraoperative
 - 2.2.1. Monitoring
 - 2.2.2. Anesthetic Induction and Maintenance
 - 2.2.3. Fluid Use
 - 2.3.4. Pulmonary Hypertension

- 2.3. Cardiovascular System
 - 2.3.1. Volemia and Contractility
 - 2.3.2. Postoperative AMI
 - 2.3.3. Arrhythmias
 - 2.3.4. Cardiopulmonary Resuscitation and Cardiopulmonary Arrest
- 2.4. Low-expenditure Syndrome
 - 2.4.1. Monitoring and Diagnosis
 - 2.4.2. Treatment
- 2.5. Respiratory System
 - 2.5.1. Postoperative Changes in Pulmonary Function
 - 2.5.2. Ventilator Management
 - 2.5.3. Pulmonary Complications
- 2.6. Renal Function
 - 2.6.1. Renal Pathophysiology
 - 2.6.2. Predisposing Factors for Renal Failure
 - 2.6.3. Prevention of Renal Failure
 - 2.6.4. Treatment of Renal Failure
- 2.7. Nervous System Neurological Damage
 - 2.7.1. Types of Neurological Damage.
 - 2.7.2. Risk Factors
 - 2.7.3. Etiology and Prevention
 - 2.7.4. Neuropathy in Critically Ill Patients
- 2.8. Hematologic Complications
 - 2.8.1. Postoperative Bleeding
 - 2.8.2. Diagnosis of Coagulopathies
 - 2.8.3. Prevention of Bleeding
 - 2.8.4. Treatment
- 2.9. Infections
 - 2.9.1. Pneumonia Associated with Mechanical Ventilation
 - 2.9.2. Infection of Surgical Wounds
 - 2.9.3. Infections Associated with Catheter Devices
 - 2.9.4. Antibiotic Prophylaxis
- 2.10. Optimization of Blood Derivative Transfusion



Module 3. Congenital Heart Disease

- 3.1. General Physiology of Congenital Heart Disease
 - 3.1.1. Large Syndromes
 - 3.1.2. Palliative Techniques
- 3.2. Patent Ductus Arteriosus
 - 3.2.1. Aortopulmonary Window
 - 3.2.2. Fistula of the Sinus of Valsalva
 - 3.2.3. Aortoventricular Tunnel
- 3.3. Obstructions to Systemic Flow
 - 3.3.1. Aortic Subvalvular Stenosis
 - 3.3.2. Aortic Valve Stenosis
 - 3.3.3. Supravalvular Aortic Stenosis and Aortic Coarctation
 - 3.3.4. Interruption of Aortic Arch
- 3.4. Atrial Septal Defect and Ventricular Septal Defect
 - 3.4.1. Atrioventricular Canal
 - 3.4.2. Truncus Arteriosus
- 3.5. Tetralogy of Fallot
 - 3.5.1. Pulmonary Atresia with VSD and MAPCAS
- 3.6. Transposition of the Main Arteries Double Outlet Right Ventricle
- 3.7. Hypoplastic Left Heart Syndrome
 - 3.7.1. Three-stage Management of Univentricular Physiology
- 3.8. Pulmonary Venous Return Anomalies
 - 3.8.1. Total and Partial Anomalous Pulmonary Venous Return
 - 3.8.2. Heterotaxia
- 3.9. Congenitally Corrected Transposition of the Great Arteries
- 3.10. Vascular Rings. Coronary Abnormalities

05

Methodology

This training program provides you with a different way of learning. Our methodology uses a cyclical learning approach: ***Re-learning***.

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 Re-learning, 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 abundant scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.

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Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method.

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



Re-Learning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Re-learning.

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 Re-learning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best Spanish-speaking 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 high socioeconomic profile and an average age of 43.5 years old.

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

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

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



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



Study Material

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

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.



Interactive Summaries

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

This exclusive multimedia content presentation training Exclusive system 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 & Re-testing

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 your goals.



Classes

There is scientific evidence on the usefulness of learning by observing experts: The system termed Learning from an Expert strengthens knowledge and recall capacity, and generates confidence in the face of difficult decisions in the future.



Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



06 Certificate

The Postgraduate Diploma in Congenital Heart Disease Surgery guarantees you, in addition to the most rigorous and updated training, access to a Postgraduate Diploma issued by TECH Technological University.



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Successfully complete this training and receive your university degree without travel or laborious paperwork”

The **Postgraduate Diploma in Congenital Heart Disease Surgery** contains the most complete and updated program on the market.

After the student has passed the evaluations, they will receive their corresponding **Postgraduate Diploma issued by TECH Technological University** by tracked delivery.

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

Title: **Postgraduate Diploma in Congenital Heart Disease Surgery**

Official N° of Hours: **450 hours**.



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

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



Postgraduate Diploma
Congenital Heart
Disease Surgery

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

Postgraduate Diploma

Congenital Heart Disease Surgery

