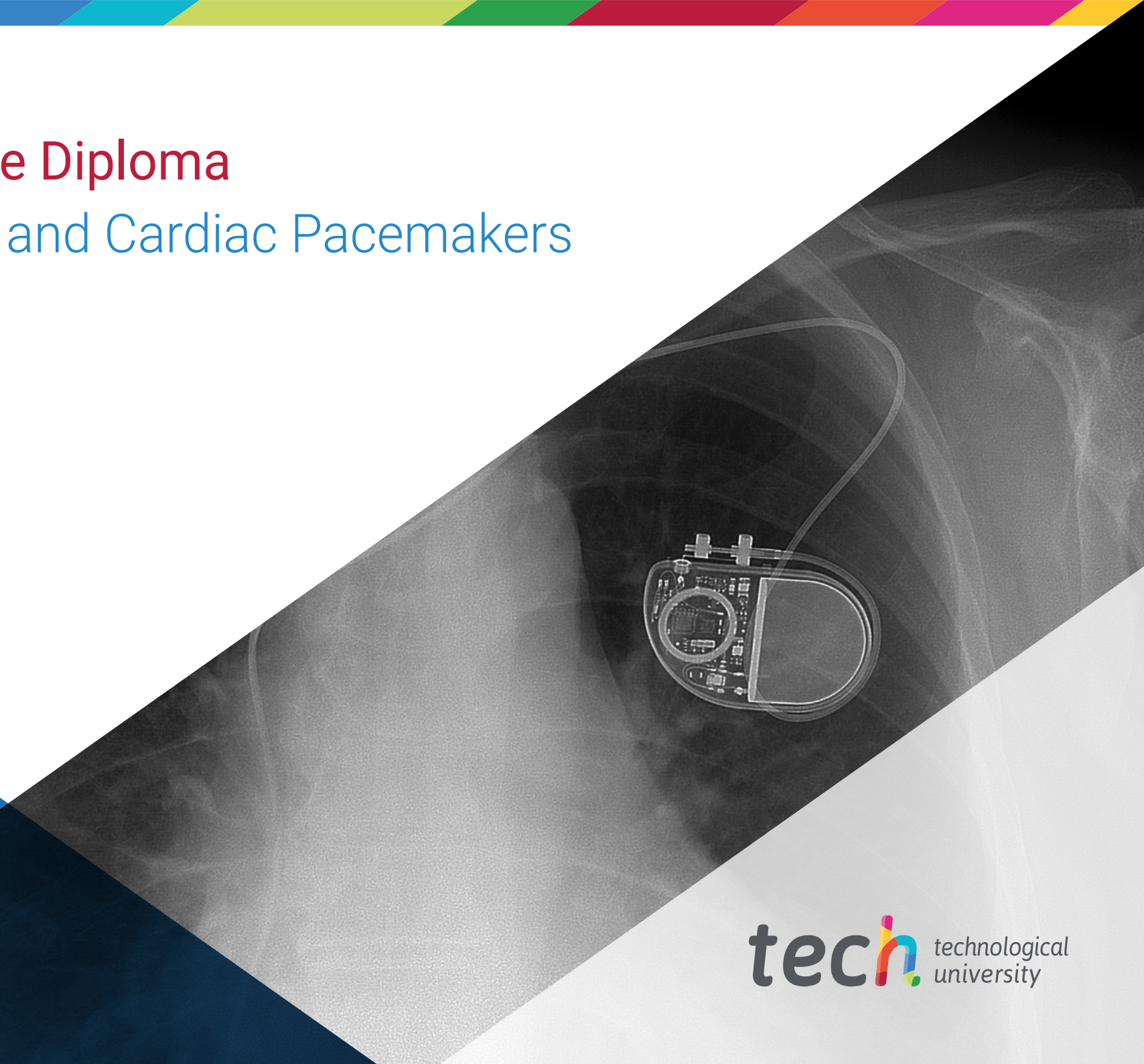


# Postgraduate Diploma

## Arrhythmias and Cardiac Pacemakers





## Postgraduate Diploma Arrhythmias and Cardiac Pacemakers

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

Website: [www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-arrhythmias-cardiac-pacemakers](http://www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-arrhythmias-cardiac-pacemakers)

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# 01

# Introduction

Acute cardiovascular pathology consists of a group of diseases that frequently require complex, on-the-spot decision making and with great repercussions for the patient's prognosis. The monitoring of patients with cardiovascular pathology in a critical situation is a very common occurrence, both in emergency departments as well as coronary units, ICU and in post-surgery patients with underlying heart disease.



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*This training will provide you with a sense of security in medical practice, which will help you grow personally and professionally.”*



This postgraduate diploma in the field of cardiology is one of the areas of great research activity, which leads to the frequent emergence of new studies, reviews, clinical practice guidelines, etc. that modify or should modify the management of patients with acute heart disease. Updating in this area is essential for non-cardiologists who work in a setting where they have to treat this patient profile, for cardiologists who are not in day-to-day contact with the acute patient but need to be competent in it, or for cardiologists interested in developing specific training in it.

The program of this Postgraduate Diploma is structured in a clear way that allows an orderly approach to each topic for the student. The modules are divided in a simple way, focusing on each one of the main groups of acute heart disease. They are taught by professionals who combine their high academic skill level with their teaching experience and their dealings with critical cardiology patients. The learning tools available to the student and the texts are fully updated and oriented to the development of competencies directly applicable in clinical practice. The structure of the postgraduate diploma includes both more theoretical content and updating in diagnosis and medical management, as well as other contents aimed at facilitating the acquisition of practical skills by students. One module of the postgraduate diploma is entirely dedicated to the development of practical skills and mastery of essential techniques in the management of the critically ill cardiovascular patient. A second module is focused on developing the essential skills for performing and interpreting echocardiograms (ECG), and their correlation with the patient's clinical situation, to make decisions on the treatment and management of the patient.

The program is aimed at encouraging and enabling the development of essential skills in the management of a patient with acute heart disease. The student profile that will benefit from taking this postgraduate diploma is that of those who need training or updating in the management of this type of patient, mainly intensivists or anesthesiologists who handle patients with heart disease, cardiologists who do not have daily contact with acute patients but who need to be up to date in their management because they are on call, or cardiologists interested in deepening and perfecting their skills in the management of patients with critical heart disease.

The **Postgraduate Diploma in Arrhythmias and Cardiac Pacemakers** contains the most complete and up to date scientific program on the market. The most important features of the program include:

- ♦ Development of more than 75 clinical cases presented by experts in arrhythmias and cardiac pacemakers. The graphic, schematic, and eminently practical contents of which they are composed provide scientific and practical information on the disciplines that are essential for professional practice.
- ♦ New developments in arrhythmias and cardiac pacemakers.
- ♦ It contains practical exercises where the self-evaluation process can be carried out to improve learning.
- ♦ Algorithm-based interactive learning system for decision-making in the presented clinical situations.
- ♦ With special emphasis on evidence-based medicine and research methodologies in arrhythmias and cardiac pacemakers.
- ♦ All this will be complemented by 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.

“Update your knowledge with the *Postgraduate Diploma in Arrhythmias and Cardiac Pacemakers.*”

“ *This Postgraduate Diploma may be the best investment you can make in the selection of a refresher program for two reasons: in addition to updating your knowledge in Arrhythmias and Cardiac Pacemakers, you will obtain a Postgraduate Diploma degree from TECH - Technological University.*”

Its teaching staff includes professionals belonging to the field of arrhythmias and cardiac pacemakers, who contribute their work experience to this training, in addition to renowned specialists belonging to leading scientific societies.

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

This program is designed around Problem Based Learning, whereby the physician must try to solve the different professional practice situations that arise during the course. For this purpose, the doctor will be assisted by an innovative interactive video system developed by renowned Postgraduate Diplomas in the field of arrhythmias and cardiac pacing devices with extensive teaching experience.

*Increase your decision-making confidence by updating your knowledge through this specialist course.*

*Make the most of this opportunity to learn about the latest advances in arrhythmias and cardiac pacing devices and improve your patient care.*



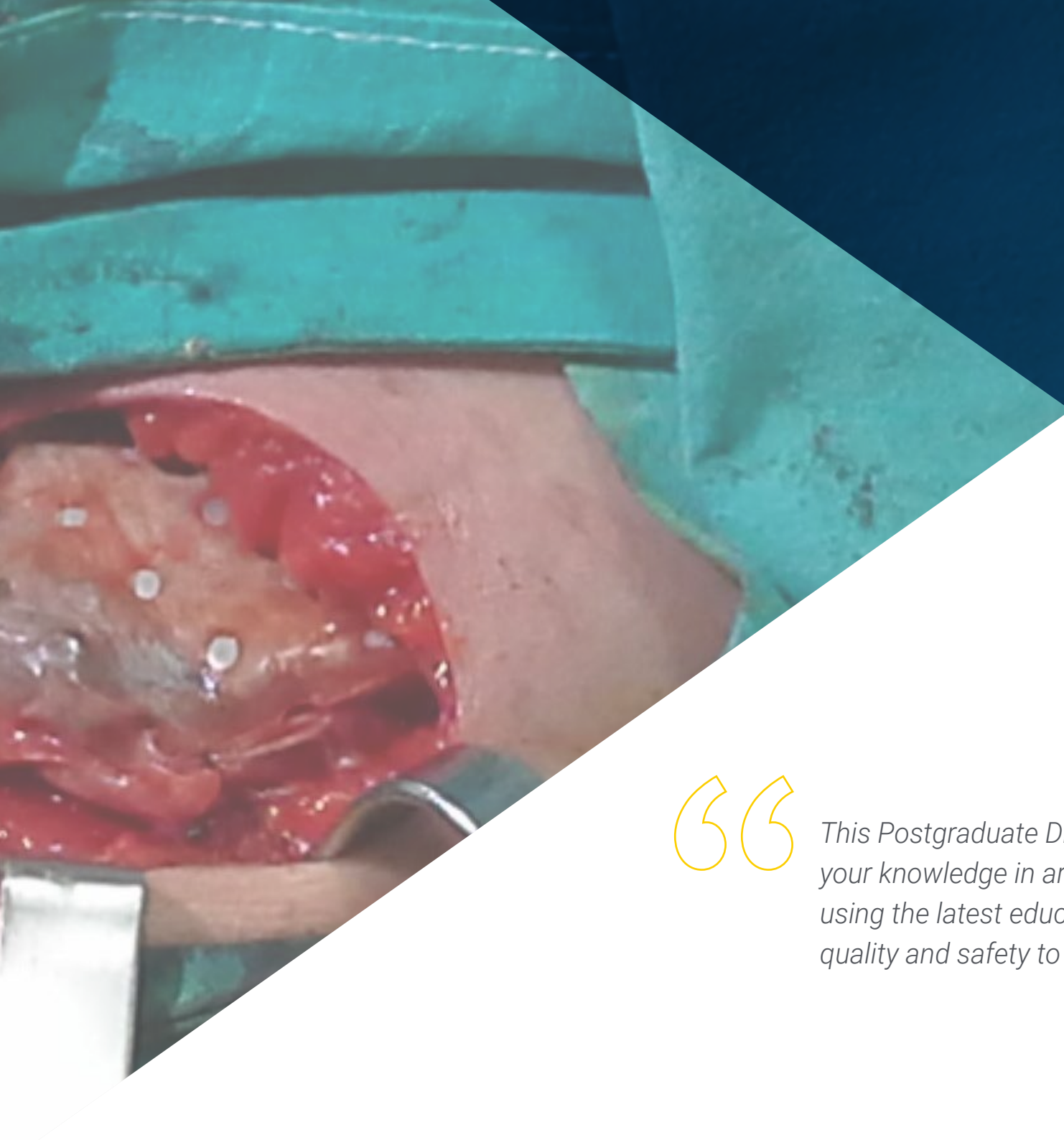
# 02

# Objectives

The main objective of the **Postgraduate Diploma in Arrhythmias and Cardiac Pacemakers** is to facilitate the doctor's actions in all types of patients at serious cardiac risk.







“

*This Postgraduate Diploma is designed for you to update your knowledge in arrhythmias and cardiac pacing devices, using the latest educational technology, to contribute with quality and safety to decision making.”*



## General Objective

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- Be fluent in the diagnostic arsenal available in a tertiary center for the management of critically ill cardiovascular patients.
- Identify the patient in serious or potentially serious short-term situation due to cardiovascular causes.
- Explain the indications for treatment and therapeutic options in critically ill cardiovascular patients.
- Lead a team attending an urgent or emergent situation for an acute cardiovascular cause and guide other colleagues in the treatment of critically ill patients.





## Specific Objectives

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### Module 1

- ♦ Prescribe the appropriate treatment for a patient with acute pulmonary edema and adequately evaluate the response to it in order to adapt decision making accordingly.
- ♦ Differentiate the different types of shock from the cardiogenic profile.
- ♦ Manage the main vasoactive drugs and adapt the administration of each one according to the indication based on the patient's situation.
- ♦ Establish the indication of the need for support with circulatory assistance and choose the appropriate one according to the patient's profile.

### Module 2

- ♦ Diagnose based on electrocardiographic findings the type of arrhythmia a patient presents with.
- ♦ Correctly indicate the need for monitoring in a patient with a rhythm disorder based on the possibility of progression to a more severe disorder.
- ♦ Establish the need for transient or permanent cardiac pacing in a patient with bradycardia.
- ♦ Identify the steps to implant a transient pacemaker in a patient requiring urgent or temporary pacing.
- ♦ Modify the programming of a pacemaker and defibrillator in preparation for an MRI or surgery.
- ♦ Examine and check the programming of a pacemaker and defibrillator and identify if it is functioning correctly.



*Take advantage of the opportunity and take the step to get up to date on the latest developments in arrhythmias and cardiac pacing devices."*



# 03

## Course Management

The program's teaching staff includes leading specialists in arrhythmias and cardiac pacing devices and other related areas, who bring their work experience to this training. Additionally, other recognized specialists participate in its design and preparation, which means that the program is developed in an interdisciplinary manner.





“

*Learn from leading professionals the latest advances in arrhythmias and cardiac pacing devices.”*



## Management



### **Dr. Rodríguez Muñoz, Daniel**

- Specialist Cardiologist in Electrophysiology and Arrhythmias at Ramón y Cajal University Hospital.
- PhD in Health Sciences, University of Alcalá.
- Master's Degree in Pacemakers, Defibrillators and Resynchronization.
- Master's Degree in Medical Education.
- Master's Degree in Diagnostic and Therapeutic Cardiac Electrophysiology.
- Fellow of the European Society of Cardiology (FESC)
- Member of the European Heart Rhythmia Association (EHRA)
- Member of the Spanish Society of Cardiology (SEC).
- Member of the Arrhythmia and Electrophysiology Section of the SEC.



### **Dr. Zamorano Gómez, José Luis**

- Head of the Cardiology Services. Ramón y Cajal University Hospital Madrid
- Doctor of Medicine- Cum Laude.
- Executive Management and Health Resources (ESADE, Madrid)
- National Qualification Professor of Medicine.
- Member of the First European Echocardiography Accreditation Committee of the European Association of Echocardiography.
- Honorary Fellow American Society of Echocardiography.
- Chairman of the Clinical Guidelines Committee of the European Society of Cardiology.
- Chairman National Cardiovascular Panel FIS, Instituto Carlos III
- Member of the Editorial Board of the Spanish Society of Cardiology Journal .
- Member of the Editorial Board of the Journal of Echocardiography.
- Member of the Editorial Board of the American Society of Echocardiography.
- Member of International Relations Task Force of the American Society of Echocardiography.
- Associate Editor of the European Heart Journal Cardiovascular Imaging.
- Author of more than 20 books, more than 500 articles in scientific journals and more than 400 communication in National and International Conferences.
- Impact Factor > 1500. IH 84. Citations > 40000

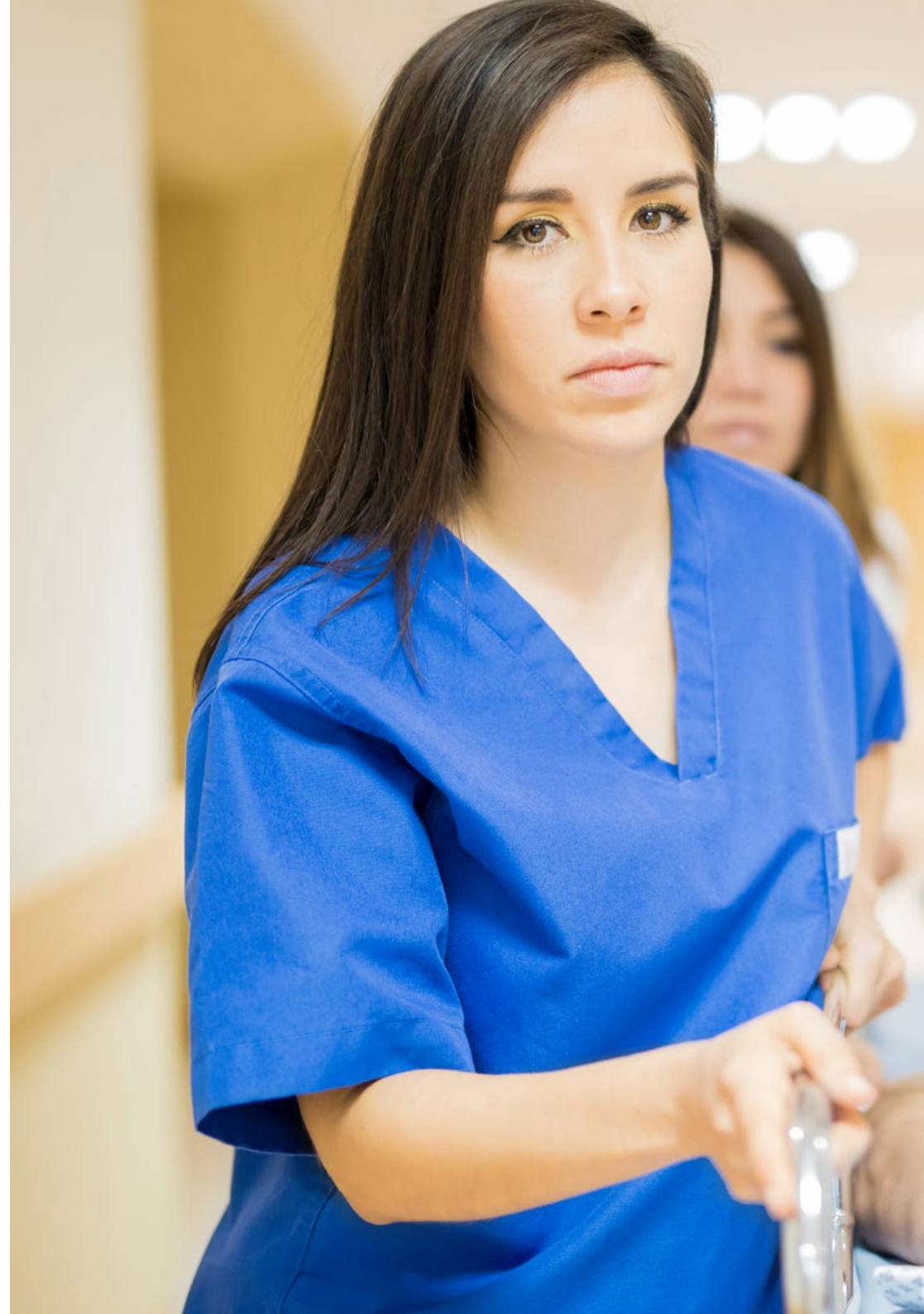
## Professors

### **Dr. Castillo Orive, Miguel**

- ♦ Cardiology Specialist in Hospitalization Unit and Cardio-diabetes Unit.
- ♦ Ramón y Cajal University Hospital Madrid

### **Dr. Sanmartín Fernández, Marcelo**

- ♦ Head of Acute Coronary Syndrome Department.
- ♦ Ramón y Cajal University Hospital Madrid





**Dr. Sionis Green, Alessandro**

- ♦ Head of Cardiac Intensive Care Unit, Cardiology Department.
- ♦ Santa Creu and Sant Pau Hospital Barcelona

**Dr. Fernández-Golfín Lobán, Covadonga**

- ♦ Cardiac Imaging Unit Coordinator.
- ♦ Ramón y Cajal University Hospital Madrid



04

# Structure and Content

The structure of the contents has been designed by a team of professionals from the best hospitals and universities in the country, aware of the relevance of current training in order to intervene in the diagnosis, treatment and monitoring of arrhythmias and cardiac pacing devices, and committed to quality teaching through new educational technologies.







“

*The Postgraduate Diploma in Arrhythmias and Cardiac Pacemakers contains the most complete and up to date scientific program on the market.”*

## Module 1. Heart Failure and Cardiogenic Shock

- 1.1. The Pathological Significance of Heart Failure.
  - 1.1.1. Structural Alterations.
    - 1.1.1.1. From Anatomy to Echocardiography.
- 1.2. Physiological Alterations.
  - 1.2.1. The Reason for Chronic Treatment and its Effects on Prognosis.
- 1.3. Acute Pulmonary Edema.
  - 1.3.1. Diagnostic and Prognostic Tools.
  - 1.3.2. Acute Treatment and Adjustment in Chronic Treatment.
- 1.4. Cardiogenic Shock.
  - 1.4.1. Diagnostic and Prognostic Tools.
    - 1.4.1.1. Differential Diagnosis of shock.
  - 1.4.2. Indication and Management of Vasoactive Drugs.
  - 1.4.3. Indication and Management of Circulatory Assistance.



## Module 2. Arrhythmias and Cardiac Pacing Devices: Diagnosis and Management in the Acute Phase

- 2.1. Supraventricular Tachyarrhythmias
  - 2.1.1. Common and Atypical Atrial Flutter.
  - 2.1.2. Atrial Fibrillation.
  - 2.1.3. Paroxysmal Supraventricular Tachycardias.
- 2.2. Ventricular Tachyarrhythmias.
  - 2.2.1. Ventricular Tachycardia in the Ischemic Patient.
  - 2.2.2. Ventricular Tachycardia in the Non-ischemic Patient.
  - 2.2.3. Idiopathic Ventricular Tachycardia.
  - 2.2.4. Polymorphic Ventricular Tachycardia and ventricular Fibrillation.
- 2.3. Bradycardias
  - 2.3.1. Sinus Dysfunction.
  - 2.3.2. Atrioventricular Conduction Disorders.
- 2.4. ST-segment Elevation ACS.



*A unique, key, and decisive training experience to boost your professional development."*

# 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 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

In a given situation, what would you do? Throughout the program, you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, 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 can experience a way of learning that is shaking the foundations of traditional universities around the world.*



According to Dr. Gervas, 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 potential 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 professional medical 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 grasp concepts, but also develop their mental capacity by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on 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.

Our 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, which represent a real revolution with respect to simply studying and analyzing cases.



*The physician will learn through real cases and by solving 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 we have trained more than 250,000 physicians with unprecedented success, in all clinical specialties regardless of the surgical load. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*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 (we learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

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



In this program you will have access to the best educational material, prepared with you 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 really specific and precise.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



#### Latest Techniques and Procedures on Video

We introduce you to the latest techniques, to the latest educational advances, to the forefront of current medical techniques. All this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.



#### Interactive Summaries

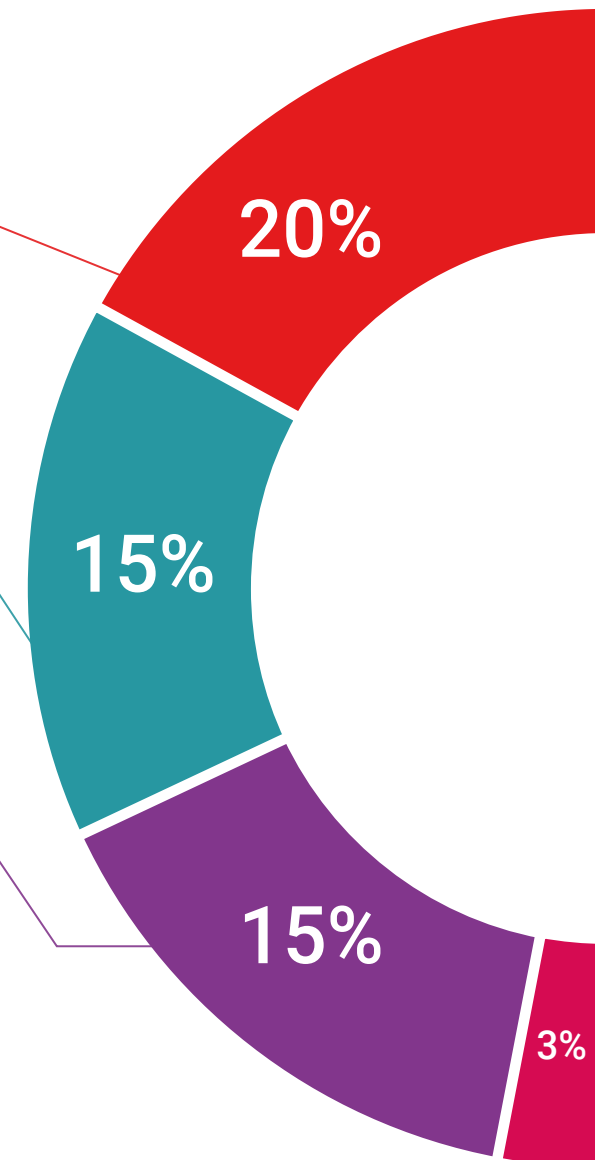
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".

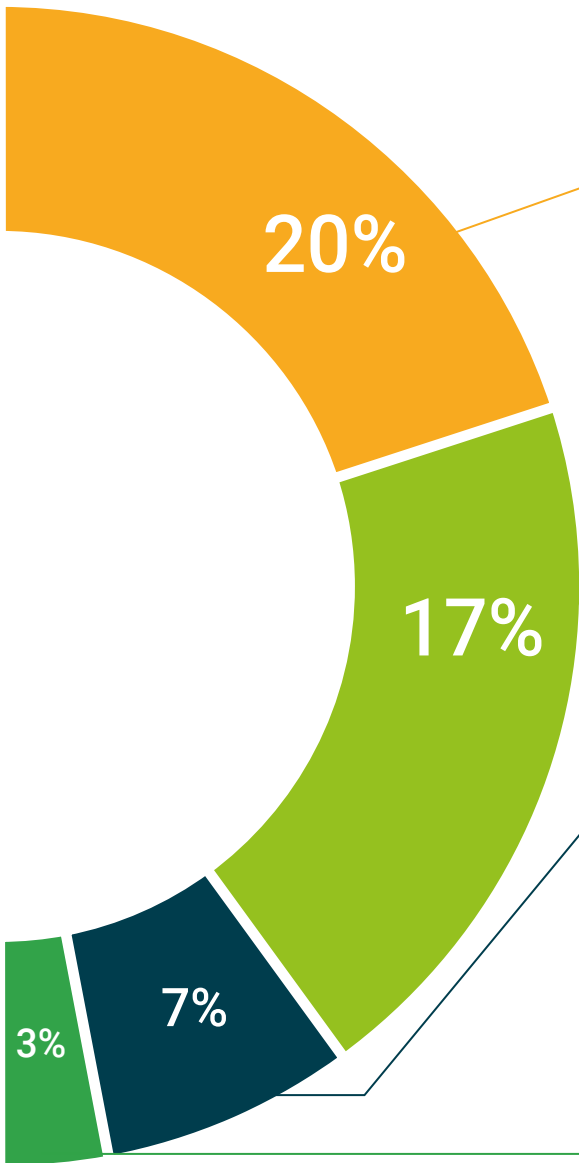


#### Additional Reading

Recent articles, consensus documents, international guides. in our virtual library you will have access to everything you need to complete your training.







**Expert-Led Case Studies and Case Analysis**

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the expert will guide you through focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



**Testing & Retesting**

We periodically evaluate and re-evaluate your knowledge throughout the program, through assessment and self-assessment activities and exercises: so that you can see how you are achieving your goals.



**Classes**

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an expert strengthens knowledge and memory, and generates confidence in our difficult future decisions.



**Quick Action Guides**

We offer you the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help you progress in your learning.



# 06 Certificate

The **Postgraduate Diploma in Arrhythmias and Cardiac Pacemakers** guarantees you, in addition to the most rigorous and up to date training, access to a Postgraduate Degree issued by **TECH - Technological University**.



“

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

This **Postgraduate Diploma in Arrhythmias and Cardiac Pacemakers** contains the most complete and up to date scientific program on the market.

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

This qualification contributes significantly to the professional's continuing education and enhances their training with a highly regarded university syllabus, and is 100% valid for all public examinations, professional careers and job vacancies.

Title: **Postgraduate Diploma in Arrhythmias and Cardiac Pacemakers**

ECTS: **17**

Official Number of Hours: **425**



\*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**  
Arrhythmias and Cardiac  
Pacemakers

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# Postgraduate Diploma

## Arrhythmias and Cardiac Pacemakers