

# Postgraduate Certificate Arrhythmias





## Postgraduate Certificate Arrhythmias

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Accreditation: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtitute.com/us/medicine/postgraduate-certificate/arrhythmias](http://www.techtitute.com/us/medicine/postgraduate-certificate/arrhythmias)

# Index

01

Introduction

---

*p. 4*

02

Objectives

---

*p. 8*

03

Course Management

---

*p. 12*

04

Structure and Content

---

*p. 18*

05

Methodology

---

*p. 22*

06

Certificate

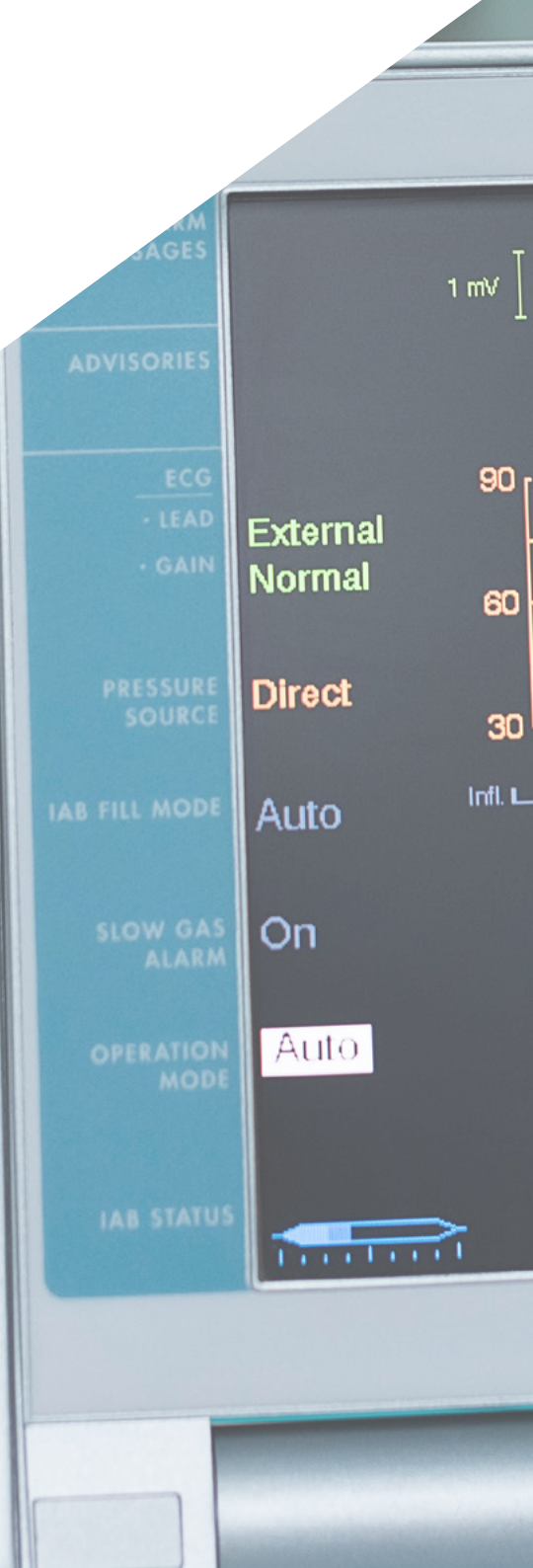
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*p. 30*

# 01

# Introduction

Despite the fact that medicine has advanced by leaps and bounds in the diagnosis and treatment of arrhythmias, the number of patients suffering from this pathology is still very high. For this reason, specialists are constantly working to improve their techniques in order to be able to offer a medical service of superior quality. In this line, we present an educational program that responds to this demand, in which cardiologists will find all the necessary information that will allow them to learn about the latest scientific postulates, the most up-to-date information and the most innovative techniques. All this in a 100% online modality that will not only allow the graduates to update their generic knowledge, but also to learn more about the origin of this cardiac problem, the most effective methods and the treatments that provide the best results.





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*A 100% online program to keep up to date with the latest advances in the diagnosis and treatment of arrhythmias”*

A thorough understanding of the causes of cardiac problems, such as arrhythmias, can help the specialist to better understand and treat this pathology. The research and advances that have been made in this area are extensive and increasingly effective. Recognizing this disorder early and keeping up to date with the best techniques and treatments helps to save lives.

With the aim of further boosting the careers of specialists and improving their knowledge in the area of cardiology, more specifically with regard to arrhythmias, TECH offers this Postgraduate Certificate designed and directed by experts in the field, with extensive professional experience in the treatment of heart failure. A modern and complete program with which students will be able to broaden their knowledge, and with which they will review diagnostic techniques and common procedures in the Electrophysiology room.

On the other hand, it will delve into the review of common antiarrhythmic drugs, with emphasis on contraindications and common adverse effects. A unique opportunity to improve your clinical skills, which will provide you with the necessary information to confidently treat this cardiac pathology.

In addition, TECH, in its commitment to offer quality education adapted to the needs of the specialist, offers this Postgraduate Certificate in an online format. In addition to the flexibility of studying from wherever the student wants, there is also the possibility of downloading all the content that will be available from the first day along with more extra material with which to continue expanding their knowledge.

This **Postgraduate Certificate in Arrhythmias** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ◆ The development of practical cases presented by experts in 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 self-assessment can be used 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



*Learn about today's most effective antiarrhythmic drugs and offer more possibilities to your patients"*

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*You will have all the content from day one. You set the schedule and TECH in return provides you with the best and most up-to-date information on arrhythmias”*

The program's teaching staff includes professionals from the 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 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 during the academic year. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

*In six weeks, you will have expanded your knowledge and will have real, quality clinical arguments with which to diagnose and treat more effectively.*

*Update your knowledge on Arrhythmias through the latest scientific findings and with experts in the field.*



# 02 Objectives

Cardiac arrhythmias are a prevalent and fairly frequent topic in cardiology consultations. For this reason, TECH's objective is to keep the specialist's generic knowledge up to date with the latest news on this cardiac disorder. This is a comprehensive refresher that will allow you, through the most modern educational technology, to delve into the causes of arrhythmias, their treatments and side effects, and also to learn about basic diagnostic techniques.







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*TECH's goal is to allow you to stay up to date without having to invest hours of extra time thanks to our relearning methodology”*



## General Objectives

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- ◆ Update general knowledge as well as the most innovative aspects of cardiological processes involving cardiac rhythm disorders
- ◆ Delve into the clinical management and indications of the different procedures performed for the diagnosis and treatment of these cardiac conditions
- ◆ Delve into the diagnosis and treatment of arrhythmias, based on clinical and electrocardiographic aspects as well as invasive techniques and electrophysiological studies
- ◆ Broaden knowledge in the operation, monitoring and implantation technique of the main implantable devices used for the treatment of arrhythmias
- ◆ Delve deeper into the problems in cardiac rhythm disorder that can arise across the spectrum of patients
- ◆ Achieve a mastery of the rhythm disorder problems present in the various scenarios faced by the cardiologist in his or her routine clinical practice





### Specific Objectives

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- ◆ Know the fundamental mechanisms that produce arrhythmias, including cellular physiology, the conduction system, cardiac anatomy of arrhythmias (including a radiological approach) and the role of genetics
- ◆ Review the most common antiarrhythmic drugs, focusing on their most important indications, contraindications and common adverse effects
- ◆ Review basic diagnostic techniques and common procedures in the Electrophysiology Department



*In a few weeks you will have broadened your knowledge and will be able to deal with clinical cases with more confidence"*

03

# Course Management

Offering an education with absolute quality assurance is one of TECH's objectives. For that reason, it has selected for this program a management team of physicians with years of experience in cardiology and research in this specialty. With this, the student will be able to work not only on the theoretical and technical concepts related to arrhythmias, but will also be able to broaden their knowledge with real, frequent and not so common clinical cases that specialists face during their professional day.





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*Learn and share insights  
from top cardiologists and  
guide your career to success”*

## International Guest Director

Awarded the “Outstanding Patient Experience Award” on multiple occasions for his excellence in patient care, Dr. Konstantinos Aronis has become a prestigious **Cardiac Electrophysiologist**. In this sense, his clinical specialty is based on the **Invasive Management of Arrhythmias** in patients suffering from **Adult Congenital Heart Disease**.

He has developed his professional work in health institutions of international reference, including the **Johns Hopkins Hospital** in Maryland or the **Beth Israel Deaconess Medical Center** in Massachusetts. In this way, he has contributed to optimizing the quality of life of numerous individuals suffering from diseases ranging from **Atrial Fibrillation** or **Ventricular Tachycardia** to **Structural Malformations of the heart**. To do so, he has employed a variety of advanced technological tools such as **Computational Modeling**, **Holder Monitors** and even **Magnetic Resonance Imaging**.

Among his main contributions, he has promoted the **Complex Ablation Program for Congenital Heart Diseases**. This has consisted in the use of **computed tomography** images to create **3D printed models** of hearts with complicated anatomies, which has made it possible to plan medical interventions with greater precision and efficiency. It has also carried out the first **intraoperative excision** for **Atrial Tachycardia**, performing the procedure in real time during cardiac surgery. This innovation made it possible to address cardiac rhythm disturbances that could not be treated conventionally without damaging nearby critical structures.

On the other hand, he balances this work with his role as a **Clinical Researcher** in Cardiac Electrophysiology. In fact, he has published numerous **scientific articles** in high-impact specialized journals. His clinical findings have contributed to the advancement of the knowledge of health professionals in areas such as **Atrial Fibrillation**, **Resynchronization** therapies or personalized **Cardiac Prototypes**.



## Dr. Aronis, Konstantinos

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- Physician at Johns Hopkins Hospital, Maryland, United States
- Cardiovascular Disease and Clinical Cardiac Electrophysiology Investigator at Johns Hopkins Hospital
- Translational Investigator at Beth Israel Deaconess Medical Center, Massachusetts
- Internal Medicine Residency at Boston University Medical Center, Massachusetts
- Internship in Computational Electrophysiology at the Institute of Computational Medicine at Johns Hopkins Hospital
- Doctorate in Internal Medicine, University of Patras
- Degree in Medical Sciences from the University of Patras
- American College of Cardiology
- American Heart Association
- Heart Rhythm Society

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*Thanks to TECH, you will be able to learn with the best professionals in the world”*

## Management



### Dr. Jiménez Sánchez, Diego

- ◆ Assistant specialist in Cardiology at the University Hospital El Escorial
- ◆ Attending Doctor Specialist at Unit of the Puerta De Hierro University Hospital
- ◆ Degree in Medicine and Surgery from the Autonomous University of Madrid
- ◆ Residency in the specialty of Cardiology at the Puerta de Hierro University Hospital
- ◆ Fellowship in electrophysiology at the Arrhythmia Unit of the Puerta de Hierro University Hospital
- ◆ University Master in Diagnostic and Therapeutic Cardiac Electrophysiology at San Pablo CEU University



### Dr. Vázquez López-Ibor, Jorge

- ◆ Assistant Cardiology Specialist at University Hospital El Escorial
- ◆ Assistant Cardiology Specialist at the Heart Failure Unit of the Puerta de Hierro Hospital
- ◆ Degree in Medicine and Surgery from the Complutense University of Madrid
- ◆ Residency in the specialty of Cardiology at the Puerta de Hierro University Hospital
- ◆ Theoretical and practical Master in Critical and Advanced Heart Failure (MICCA) at the Gregorio Marañón Hospital
- ◆ Theoretical and practical training in Cardiovascular Research at the National Center for Cardiovascular Research (CNIC)
- ◆ Fellowship in Advanced Heart Failure, Heart Transplantation and Pulmonary Hypertension at the Puerta de Hierro University Hospital





### **Dr. Castro Urda, Víctor**

- ◆ Assistant Specialist in the Arrhythmia Unit of the Cardiology Service of the Puerta de Hierro Hospital
- ◆ Degree in Medicine and Surgery from the Complutense University of Madrid
- ◆ Residency in the specialty of Cardiology at the Puerta de Hierro University Hospital
- ◆ Internship at the Electrophysiology and Cardiology Department of the Hospital UZ Brussel, Belgium
- ◆ Master in Diagnostic and Therapeutic Cardiac Electrophysiology at the Complutense University of Madrid

## **Professors**

### **Dr. García Rodríguez, Daniel**

- ◆ Fellow in Electrophysiology and Arrhythmias at the Arrhythmia Unit of the Puerta de Hierro University Hospital
- ◆ Graduated in Medicine at the Autonomous University of Madrid
- ◆ Residency in the specialty of Cardiology at the Puerta de Hierro University Hospital
- ◆ Master's Degree in Diagnostic and Therapeutic Cardiac Electrophysiology at San Pablo CEU University

# 04

## Structure and Content

The syllabus of this Postgraduate Certificate has been designed based on the demand, not only of the teaching staff, but also of the subject of study itself. The program is up to date and detailed, based on the latest developments in cardiology and adapted to the teaching methodology that defines TECH. The purpose of this university is to make it easier for the specialist to complete the educational program in a practical, comfortable way and to finish with all the necessary knowledge to adequately face the working world.



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*A program designed by and for cardiology specialists and based exclusively on the important concepts, without redundancies”*

## Module 1. Arrhythmias. Fundamental Concepts

- 1.1. Physiology
  - 1.1.1. Special Features of Myocardial Cells
  - 1.1.2. Action Potential
  - 1.1.3. Main Ionic Currents Involved
- 1.2. Genetics of Arrhythmias
- 1.3. Cardiac Conduction System
  - 1.3.1. Sinoatrial Node and AV Node
  - 1.3.2. His-Purkinje System
- 1.4. Mechanisms of Arrhythmias
  - 1.4.1. Automatism
  - 1.4.2. Triggered Activity
  - 1.4.3. Reentry
  - 1.4.4. Micro-Entry
- 1.5. Antiarrhythmic Drugs
  - 1.5.1. Type I
  - 1.5.2. Type I
  - 1.5.3. Type III
  - 1.5.4. Type IV
- 1.6. Basic Diagnostic Techniques Used in Arrhythmias
  - 1.6.1. Holter
  - 1.6.2. Tilt Test
  - 1.6.3. Pharmacological Tests
  - 1.6.4. Implantable Holter
  - 1.6.5. Wearables and Other Devices
- 1.7. Common Procedures Performed for the Diagnosis and Treatment of Arrhythmias
  - 1.7.1. EPS and Ablation
  - 1.7.2. Electroanatomical Mapping Systems. Navigation Systems
- 1.8. Cardiac Anatomy Focused on Arrhythmias
- 1.9. Radiological Anatomy
- 1.10. Organization and Operation of Arrhythmia Units





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*An educational program backed not only by the reputation of being the best digital university in the world, but also by a great team of cardiology professionals”*

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.





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*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.



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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.



## 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.*



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.



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



#### Study Material

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

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



#### Surgical Techniques and Procedures on Video

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



#### Interactive Summaries

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

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



#### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





#### Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



#### Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



#### Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



#### Quick Action Guides

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



# 06 Certificate

The Postgraduate Certificate in Arrhythmias guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate 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”*

This private qualification will allow you to obtain a **Postgraduate Certificate in Arrhythmias** 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** private qualification 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 Certificate in Arrhythmias**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 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.





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# Postgraduate Certificate

## Arrhythmias

