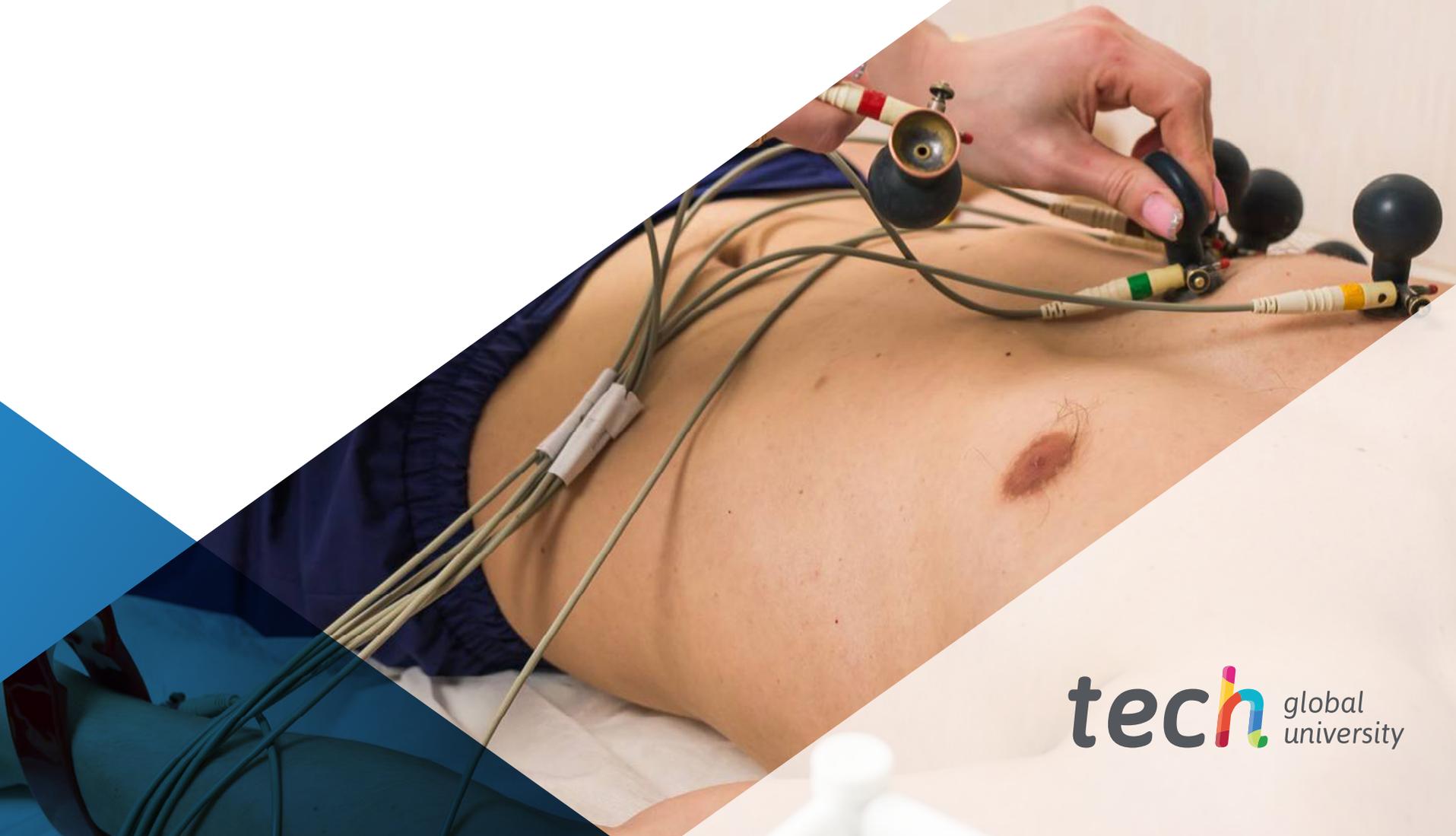


# Postgraduate Certificate Bradyarrhythmias





## Postgraduate Certificate Bradyarrhythmias

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

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

# 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

---

*p. 30*

# 01

# Introduction

The causes of bradycardia are many and varied. Thanks to continuous research, the information that exists today on this heart rhythm disturbance is extensive and, at times, impossible for specialists to examine due to lack of time. This program was created in response to this need. It presents a complete program that addresses the different pathological alterations that cause physiological bradycardia and a reinforcement of its basic pathophysiological mechanisms, as well as an in-depth study of its diagnosis and treatment. All this added to the facilities provided by an online program, with an innovative approach and the most modern pedagogical tools in the sector.



## Спирометрия

Возраст	Пол	Высота
22	---	18
Время	Время	Средн.
5	7.7	247
Время	Время	Средн.
---	9.5	189
Время	Время	Средн.
0	63	---

Температура  
**A/C PC**

FiO2  
**30**  
%

Рвдох  
**13**  
смH2O



Although bradycardia isn't among the arrhythmias with the highest frequencies, nor among those with the highest mortality rates, it is present in the day-to-day work of a cardiologist. However, its diagnosis and treatment are of vital importance since, in the event of a worsening of this heart rhythm disturbance, it could cause serious consequences for the patient, from the need to implant a pacemaker to even death.

Therefore, handling the most up-to-date information based on recent successful research is essential for a specialist. That is why TECH has designed this Postgraduate Certificate, in order to offer you all the information that will allow you to know the latest news and advances in this branch of Cardiology.

Through a tour of the different types of cardiac alterations that produce bradycardia, the syllabus distinguishes the physiological from the different pathological alterations that lead to bradycardia, with emphasis on the reinforcement of its basic pathophysiological mechanisms. In addition, it details how each of these disorders occur and behave, their diagnostic study and treatment. Finally, it delves into the study of syncope as a result of pathological situations of bradycardia.

A content designed and created by a group of experts in Cardiology, who will accompany the graduate during the course of the program with individualized tutorials. A 100% online program, with the best information, real clinical cases, top-quality audiovisual material and the possibility of downloading all the content to review it from any device with an internet connection.

This **Postgraduate Certificate in Bradyarrhythmias** 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



*Access all content from day one.  
Download and review it from any device,  
wherever and whenever you want"*

“

*Enhance your knowledge of bradycardia with a curriculum based on the latest research”*

The program includes, in its teaching staff, professionals from the sector who bring to this education 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 a 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.

*This Postgraduate Certificate will allow you to improve in the diagnosis and treatment of Bradyarrhythmias.*

*With the complementary clinical cases included in each lesson you will be able to see the information developed during the unit applied.*



# 02 Objectives

TECH's objective with this Postgraduate Certificate is that the specialist finds in its syllabus a guide that allows and facilitates the updating of concepts. Therefore, it offers quality content carefully selected on the basis of the latest developments in the field of Cardiology in relation to Bradyarrhythmias. In addition, it offers research articles, multimedia material and an extensive bibliography with which the graduate will be able to continue expanding his or her knowledge.



“

*TECH aims to make information more accessible to specialists. That's why it's the perfect choice if you want to expand your knowledge"*



## General Objectives

---

- ◆ 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 cardiologists in their routine clinical practice





## Specific Objectives

---

- ◆ Know the definition and types of Bradyarrhythmias, as well as their basic mechanisms
- ◆ Review the studies available for its diagnosis and characterization
- ◆ Study in depth the fundamental groups of Bradyarrhythmias (sinus node disease and AV block), with special emphasis on diagnosis and treatment
- ◆ Delve into the study of the patient with syncope, from mechanisms and causes to diagnosis and treatment
- ◆ Review in detail the current indications for pacemaker implantation



*The 150 hours of this Postgraduate Certificate are not only divided into theoretical and practical content, but also include multimedia material of the highest quality, dynamic summaries and much more"*

# 03

# Course Management

TECH has placed its trust in a group of experts in Cardiology with extensive professional experience for the direction of this Postgraduate Certificate. In this way it guarantees the best quality syllabus and a committed teaching, not only with the program, but also with the graduates themselves. In addition, the specialist will have individualized tutorials through the Virtual Classroom and additional multimedia content selected exclusively by these experts.



“

*Get advice from the best cardiologists and obtain a more critical view of the specialty thanks to their experience"*

## 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

---

- 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

“

*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's Degree in Diagnostic and Therapeutic Cardiac Electrophysiology at the Complutense University of Madrid

## **Professors**

### **Dr. Aguilera Agudo, Cristina**

- ◆ Assistant Specialist Physician in the Cardiology Service of the Puerta de Hierro Hospital
- ◆ Personal Physician of Continuous Care at the University Hospital of Guadalajara
- ◆ Degree in Medicine and Surgery at the University of Granada
- ◆ Diploma in Statistics in Health Sciences at the Autonomous University of Barcelona
- ◆ Master's Degree in Diagnostic and Therapeutic Cardiac Electrophysiology at San Pablo CEU University

# 04

# Structure and Content

The content of this program has been designed based on the results of the most current research. That is why the specialist will find in the program of this Postgraduate Certificate, with total guarantee, the most complete and updated information, complemented with the best multimedia and didactic material. Each of the topics has been carefully elaborated by the TECH teaching team. Therefore, you will have all the necessary material that will allow you to contextualize everything addressed during the course of the program.





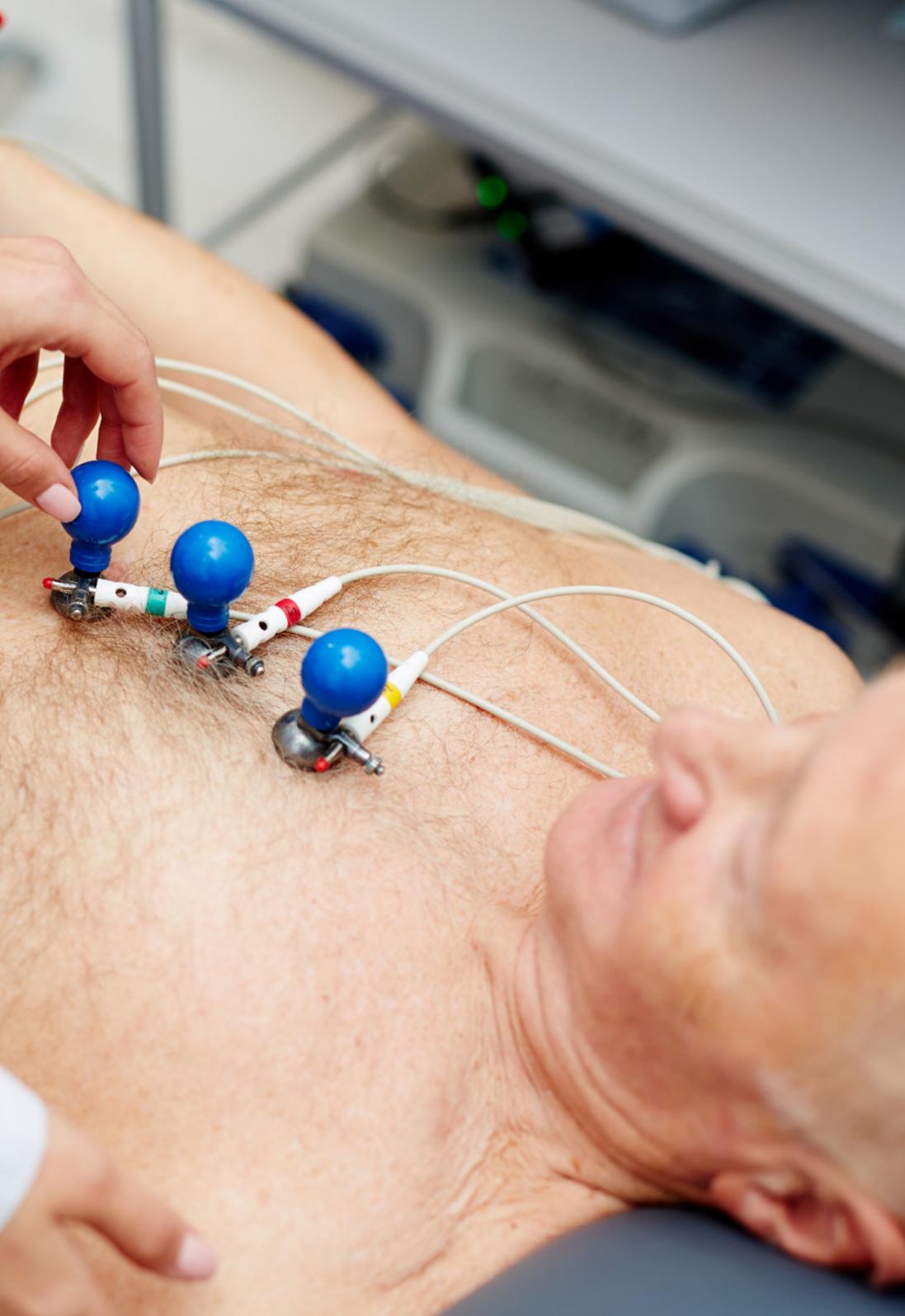
“

*Forget about memorizing terms. With our educational methodology, you will gradually improve and acquire the concepts in a natural way”*

## Module 1. Bradyarrhythmias

- 1.1. Bradyarrhythmia
- 1.2. Types of Bradyarrhythmias
- 1.3. Mechanisms/Physiopathology of Bradyarrhythmias
- 1.4. Diagnostic Studies Aimed at Bradyarrhythmias
- 1.5. Sick Sinus Syndrome
- 1.6. AV Blocks
- 1.7. Syncope
  - 1.7.1. Causes of Syncope
  - 1.7.2. Mechanisms of Syncope
  - 1.7.3. Diagnostic Study and Differential Diagnosis
- 1.8. Indication for Pacemaker Implantation. Indications for Transient PM Implantation
  - 1.8.1. Sinus Dysfunction
  - 1.8.2. AV Blocks
- 1.9. EEF Study of Bradyarrhythmias





“

*The time has come to become an expert in Bradyarrhythmias. Shall we help you achieve it?”*

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.





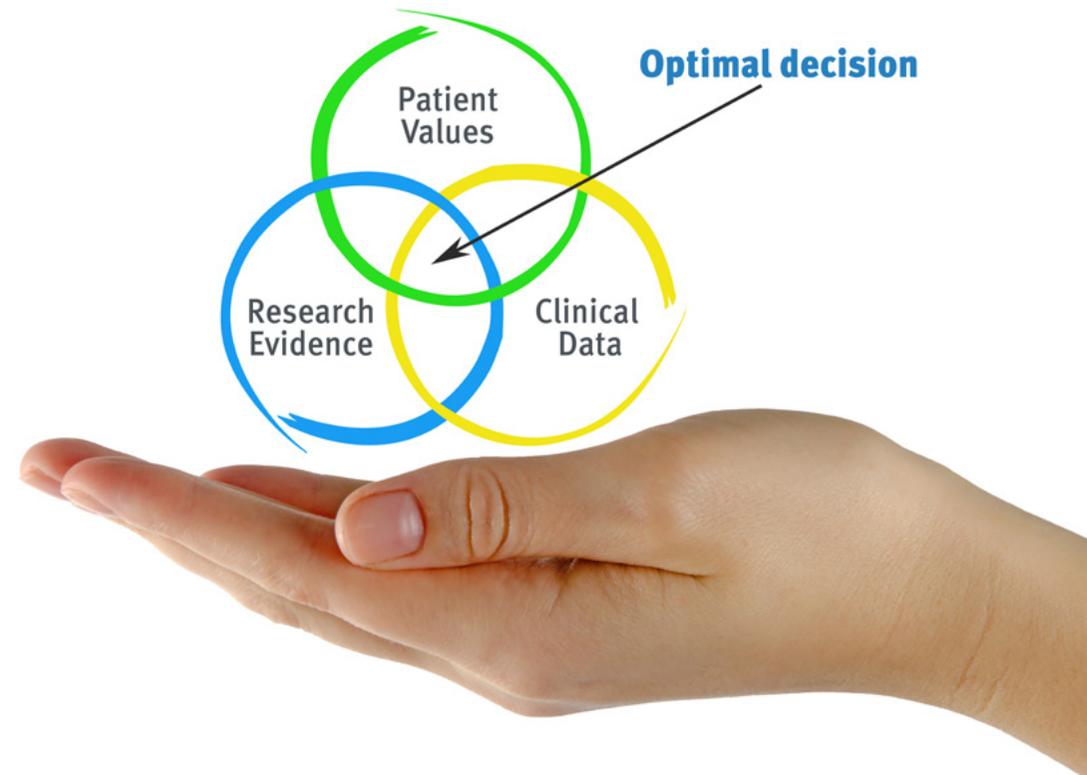
“

*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. 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 power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.

“

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

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

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



## 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 Bradyarrhythmias guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.



“

*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 Bradyarrhythmias** 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 Bradyarrhythmias**

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.

future

health confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commitment

personalized service innovation

knowledge present quality

online

development

languages

virtual classroom

**tech** global  
university

## Postgraduate Certificate Bradyarrhythmias

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

# Postgraduate Certificate Bradyarrhythmias

