

# Postgraduate Diploma

## Diagnosis and Treatment of the Critically Ill Cardiovascular Patient





## Postgraduate Diploma Diagnosis and Treatment of the Critically Ill Cardiovascular Patient

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

Website: [www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-diagnosis-treatment-critically-ill-cardiovascular-patient](http://www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-diagnosis-treatment-critically-ill-cardiovascular-patient)

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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. Whether the patient's clinical problem is primarily cardiac or is a complication resulting from an acute problem of another organ or system, the appropriate diagnosis and management of the acute heart disease is crucial for the patient's evolution and prognosis in the short, medium and long term.





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*This specialization will generate a sense of confidence in the performance of medical practice, which will help you grow both 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 an environment 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 a specific specialization in it.

The program of this Postgraduate Diploma is structured in a clear way, which 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 up to date and are oriented to the development of competencies directly applicable in clinical practice. The structure of the Postgraduate Diploma brings together 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 those who need specialization 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 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 Diagnosis and Treatment of the Critically Ill Cardiovascular Patient** 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 Diagnosis and Treatment of the Critically Ill Cardiovascular Patient.
- ♦ 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 diagnostic-therapeutic developments on assessment, diagnosis and intervention in Diagnosis and Treatment of the Critically Ill Cardiovascular Patient.
- ♦ 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 Diagnosis and Treatment of the Critically Ill Cardiovascular Patient.
- ♦ 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 Diagnosis and Treatment of the Critically Ill Cardiovascular Patient."*

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*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 Diagnosis and Treatment of the Critically Ill Cardiovascular Patient, you will obtain a Postgraduate Diploma from TECH - Technological University."*

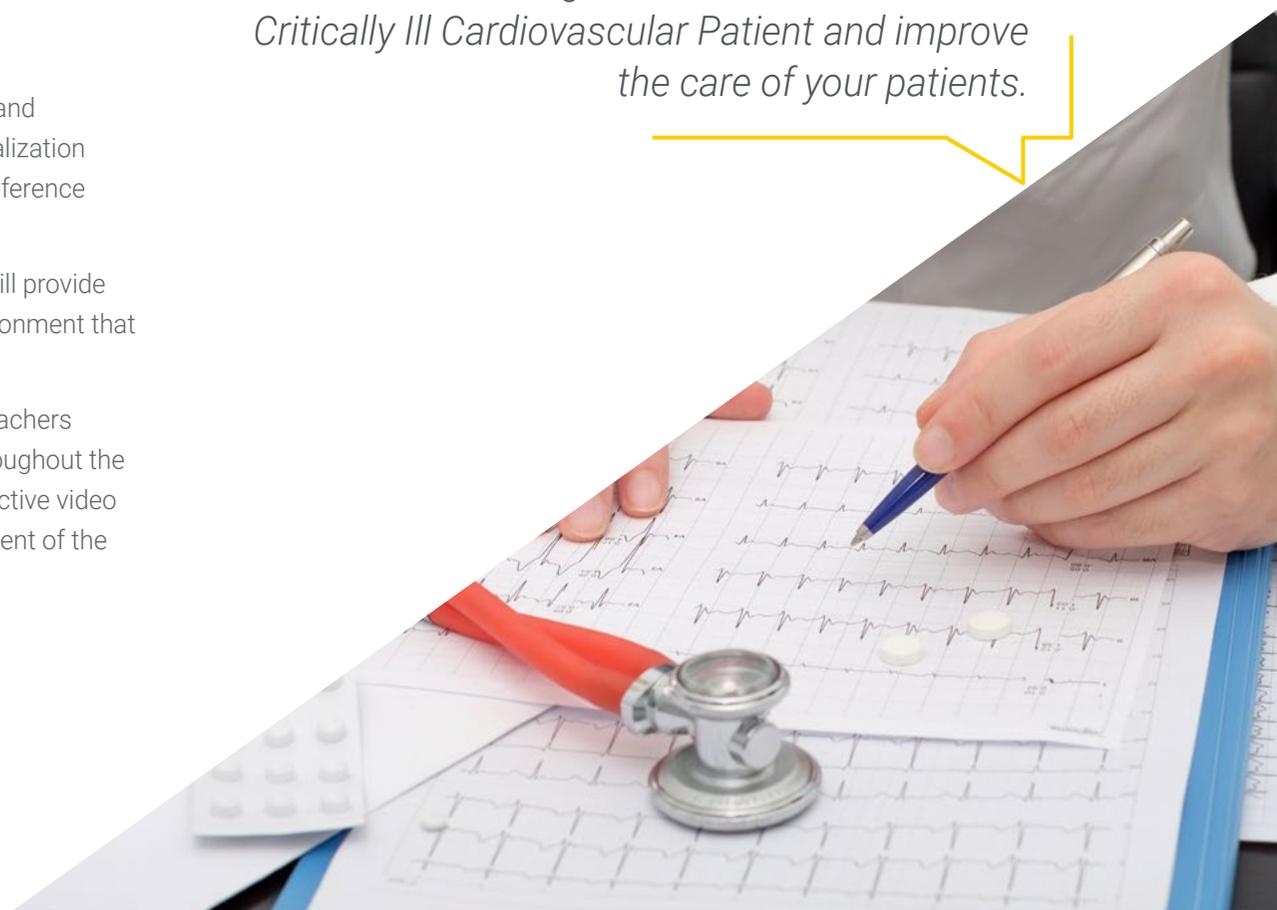
Its teaching staff includes professionals belonging to the field of Diagnosis and Treatment of the Critically Ill Cardiovascular Patient, who bring to this specialization the experience of their work, as well as renowned specialists belonging to reference societies and prestigious universities.

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 an immersive training program to train in real situations.

The program design is based on Problem-Based Learning, through which teachers must try to solve the different professional practice situations that arise throughout the course. For this purpose, the student will be assisted by an innovative interactive video system developed by renowned experts in the field of Diagnosis and Treatment of the Critically Ill Cardiovascular Patient, with extensive teaching experience.

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

*Take the opportunity to learn about the latest advances in Diagnosis and Treatment of the Critically Ill Cardiovascular Patient and improve the care of your patients.*



02

# Objectives

The Postgraduate Diploma in Diagnosis and Treatment of the Critically Ill Cardiovascular Patient is aimed at facilitating the doctor's actions in all types of patients at cardiological risk.





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*This Postgraduate Diploma is designed to update your knowledge in Diagnosis and Treatment of the Critically Ill Cardiovascular Patient, with the use of the latest educational technology, to contribute with quality and safety to decision making."*



## General Objectives

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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 reasons.
- ♦ 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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- Describe the echocardiographic planes and the structures to be visualized in each of them.
- Explain the hemodynamic calculations that can be performed based on echocardiographic Doppler technology and their importance in the critical cardiovascular patient.
- Identify the most frequent expected findings in an echocardiogram in a patient in the surgical patient or under structural or coronary interventionism.
- Identify acute complications in the patient with acute myocardial infarction.
- Explain the indication for intubation and invasive and noninvasive mechanical ventilation in a cardiovascular critical patient.
- Describe the hemodynamic and respiratory impact of each mode of ventilation.
- Identify the need for drainage of a pericardial effusion.
- Know how the counterpulsation balloon works and the indications and contraindications for its implantation.



*Make the most of the opportunity and take the step to get up to date on the latest developments in Diagnosis and Treatment of the Critically Ill Cardiovascular Patient."*

# 04

# Course Management

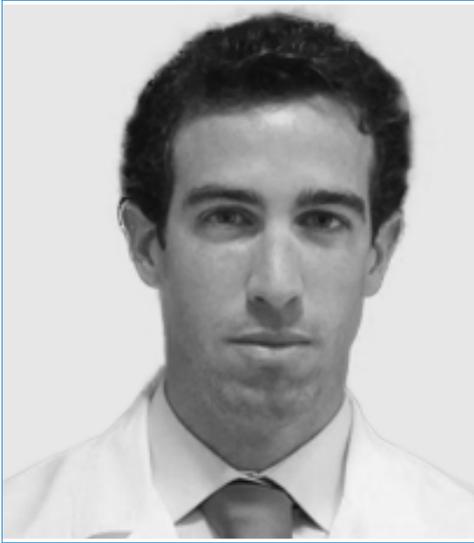
The program's teaching staff includes leading specialists in Diagnosis and Treatment of the Critically Ill Cardiovascular Patient and other related areas, who bring the experience of their work to this specialization. Additionally, other recognized specialists participate in its design and preparation, which means that the program is developed in an interdisciplinary manner.



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*Learn from leading professionals  
the latest advances in Diagnosis  
and Treatment of the Critically Ill  
Cardiovascular Patient."*

## 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. Fernández-Golfín Lobán, Covadonga**

- ♦ Cardiac Imaging Unit Coordinator.
- ♦ 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

05

# Structure and Content

The structure of the contents has been designed by a team of professionals from the best hospitals and universities in Spain, aware of the relevance of current specialization in order to intervene in the diagnosis, treatment and follow-up of the Diagnosis and Treatment of the Critically Ill Cardiovascular Patient, and committed to quality teaching through new educational technologies.



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*The Postgraduate Diploma in Diagnosis and Treatment of the Critically Ill Cardiovascular Patient contains the most complete and up to date scientific program on the market."*

## Module 1. Echocardiography in the Critical Cardiovascular Emergency Department Patient

- 1.1. Basic Skills in Echocardiography.
  - 1.1.1. Echocardiographic Charts.
  - 1.1.2. Limitations in the Acute Context.
  - 1.1.3. Hemodynamic Calculations.
- 1.2. Special Situations.
  - 1.2.1. Targeted echocardiography in the Initial Patient Evaluation.
    - 1.2.1.1. The Patient in Shock and the Echocardiogram as a Diagnostic Tool.
  - 1.2.2. Echocardiography in the Hemodynamics Laboratory.
  - 1.2.3. Echocardiography in the Cardiac Operating Room.
  - 1.2.4. Acute Complications in Myocardial Infarction.

## Module 2. Procedures and Techniques in a Patient in Cardiovascular Critical Care

- 2.1. Intubation and Invasive Mechanical Ventilation.
  - 2.1.1. Orotracheal Intubation.
    - 2.1.1.1. Technique and Available Tools.
  - 2.1.2. Mechanical Ventilation.
    - 2.1.2.1. Forms of Ventilation.
    - 2.1.2.2. Adjustment according to the Hemodynamic and Respiratory Status of the Patient.
- 2.2. Pericardiocentesis.
  - 2.2.1. Indication
  - 2.2.2. Techniques
  - 2.2.3. Alternatives to Pericardial Drainage.
- 2.3. Arterial and Central Venous Cannulation.
  - 2.3.1. Indication
  - 2.3.2. Techniques
- 2.4. Counterpulsation Balloon
  - 2.4.1. Indication
  - 2.4.2. Implant Technique.
- 2.5. Transient Pacemaker.
  - 2.5.1. Indication
  - 2.5.2. Implant Technique.



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*A unique, key, and decisive master's degree experience to boost your professional development.”*

06

# Methodology

This training program provides you with a different way of learning. Our methodology is developed through a cyclical learning mode: **Relearning**.

This teaching system is used in the most prestigious medical schools in the world and has been considered one of the most effective by major publications such as the *New England Journal of Medicine*.



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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

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. 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 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.

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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 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 Postgraduate Diploma you will have access to the best educational material, prepared with you in mind:



### Study Material

After a complex production process, we transform the best content into high-quality educational and audiovisual multimedia. We select the best syllabus and make it available to you. Everything you need to acquire in-depth knowledge of a discipline, from A to Z. Lessons written and chosen by specialists in each of the disciplines.



### Surgical techniques and clinical procedures on video

We bring you closer to the newest techniques, to the latest scientific advances, to the forefront of doctor news. 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.



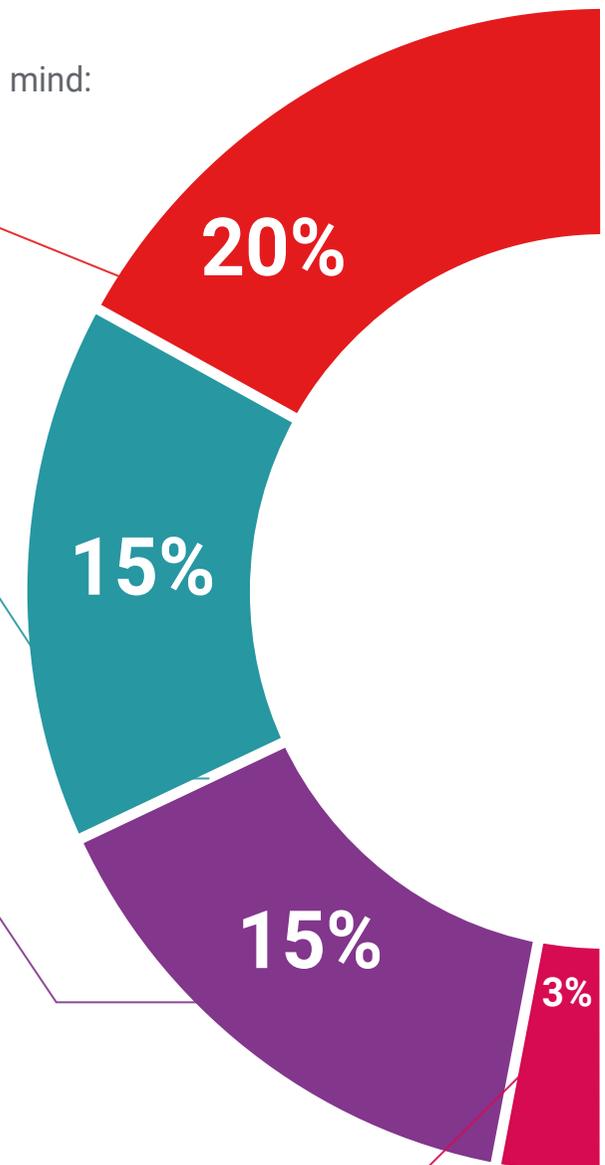
### Interactive Summaries

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 training system for presenting multimedia content 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**

Through the narratives of expert professionals, it is possible to acquire a high degree of understanding of the most frequent problematic situations. The professional's healthcare practice is not alien to the context in which it takes place. If we want to train ourselves to improve our professional practice, this training must be situated within the context in which it takes place.



**Testing & Retesting**

We periodically evaluate and re-evaluate your knowledge throughout this program through activities and evaluative exercises.



**Classes**

There is scientific evidence suggesting that observing third-party experts can be useful. Learning from an expert strengthens knowledge and recall, and generates confidence in our future difficult decisions



**Quick Action Guides**

One of the most important functions of our team is to select those contents considered essential and present them in the form of worksheets or quick action guides to facilitate their understanding.



# 06 Certificate

The **Postgraduate Diploma in Diagnosis and Treatment of the Critically Ill Cardiovascular Patient** guarantees you, in addition to the most rigorous and up to date specialization, access to a Postgraduate Diploma issued by **TECH - Technological University**.



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*Successfully complete this specialisation and receive your Postgraduate Diploma without travel or laborious paperwork.”*

This **Postgraduate Diploma in Diagnosis and Treatment of the Critically Ill Cardiovascular Patient** contains the most complete and up to date scientific program on the market.

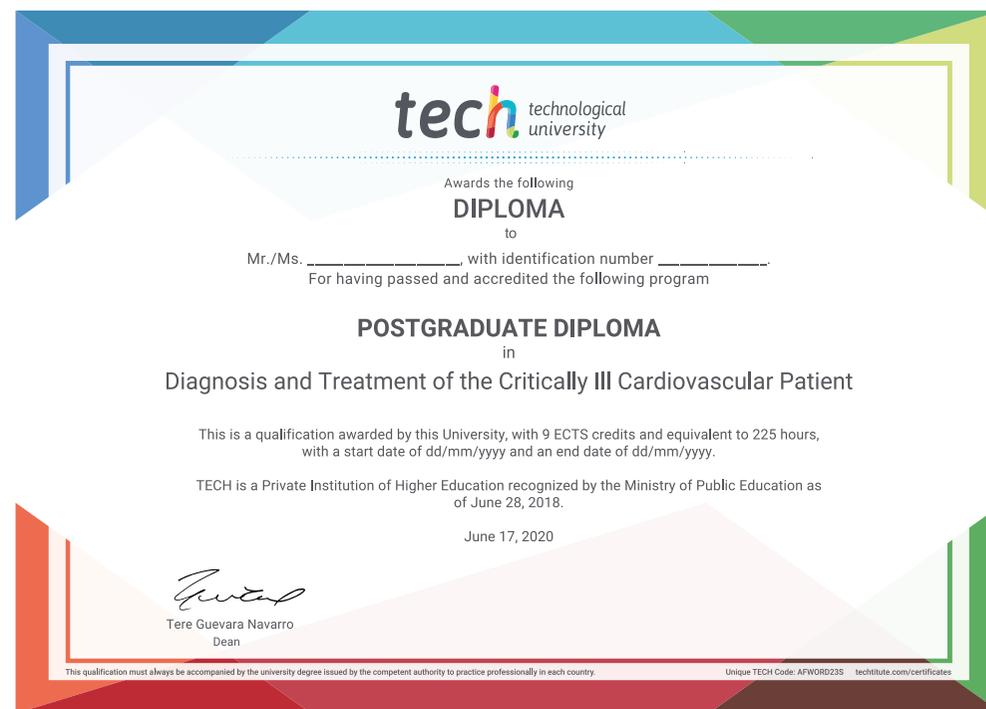
After the student has passed the evaluations, they will receive their corresponding **Postgraduate Diploma** issued by **TECH - Technological University**.

The certificate issued by **TECH - Technological University** will specify the qualification obtained through the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Diagnosis and Treatment of the Critically Ill Cardiovascular Patient**

ECTS: 9

Official Number of Hours: **225**



\*Apostille Convention. In the event that the student wishes to have their paper diploma Apostilled, TECH EDUCATION will make the necessary arrangements to obtain it at an additional cost of €140 plus shipping costs of the Apostilled diploma.



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