

# Postgraduate Certificate

## Clinical Cardiac Ultrasound for Nursing





## Postgraduate Certificate Clinical Cardiac Ultrasound for Nursing

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

Website: [www.techtitute.com/us/nursing/postgraduate-certificate/clinical-cardiac-ultrasound-nursing](http://www.techtitute.com/us/nursing/postgraduate-certificate/clinical-cardiac-ultrasound-nursing)

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# 01

# Introduction

Clinical ultrasound is a common technique in the diagnosis of cardiac pathologies, so it is essential that healthcare professionals have in-depth knowledge of all the advantages and applications of this tool. This Postgraduate Certificate is specially designed to train nurses who work in the emergency department or who treat critically ill patients.





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*We offer you the most complete education, delivered by the leading professionals in the field, in order to achieve the goal of providing quality practice that every nurse should be aiming for”*

Technological advances affect all areas of society and healthcare is no exception; in fact, it is one of the sectors that benefits most from new developments in technology. This is the case for the diagnosis of cardiac pathology and the ultrasound devices used. Clinical cardiac ultrasound opens a door to the advanced diagnosis of multiple heart diseases and, nowadays, its use is also fundamental in the daily work of nurses, so it is essential for them to have up-to-date knowledge of the use of this type of tools.

It must be taken into account that clinical ultrasound is a tool that helps to diagnose and treat patients in emergency situations or with intensive care needs. Today it is one of the most popular and valuable tools for guiding diagnostic and therapeutic interventions. In addition, it has the advantages of portability, accuracy, real-time display, reproducibility and efficiency.

Technological advances have made it possible to reduce the size of the equipment, making it cheaper and more portable, and have increased the capacity of clinical ultrasound, leading to a notable increase in its applications. Today, more accurate ultrasound diagnosis, safe ultrasound-guided interventions, precise non-invasive hemodynamic evaluations and rapid assessment of traumatic injuries are all possible.

In this Postgraduate Certificate, TECH offers students the most complete specialization program on clinical ultrasound, specifying its use in the care of patients who find themselves in emergency situations or those who need intensive care. Additionally, as it is a 100% online program, the student will have the opportunity to balance their studies with the rest of their daily commitments, so that they will be able to improve their skill level in a comfortable way.

This **Postgraduate Certificate in Clinical Cardiac Ultrasound for Nursing** contains the most complete and up-to-date scientific program on the market. The most important features of the program include:

- ♦ Clinical cases presented by experts in clinical ultrasound in emergencies and intensive care
- ♦ 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
- ♦ The latest developments in Clinical Cardiac Ultrasound
- ♦ Practical exercises where self-assessment can be used to improve learning
- ♦ An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course
- ♦ 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



*Technological advances have led to improved ultrasound scanners, which are becoming more useful and can be used in more situations"*

“ *This Postgraduate Certificate is the best investment you can make when choosing a specialist course for two reasons: you will acquire the best and most up-to-date education in Clinical Cardiac Ultrasound and you will obtain a qualification from the online university: TECH Technological University*”

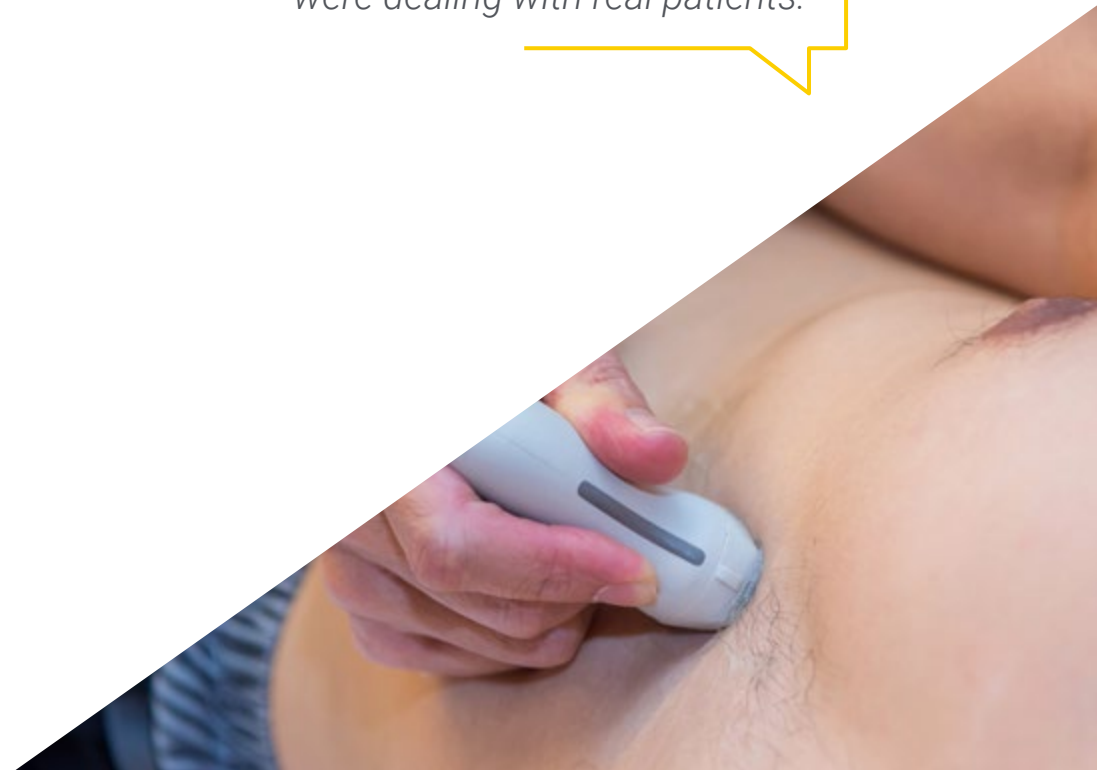
The teaching staff includes professionals from the field of clinical ultrasound, who contribute their experience to this program, as well as renowned specialists from leading scientific societies

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 designed to train in real situations

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise throughout the program. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts in the field of clinical ultrasound with extensive teaching experience

*Our trainings have the best teaching methodology and the latest didactic tools, which will allow you to study from home, but without losing the possibilities offered by on-site classes.*

*We offer you the opportunity to study with a multitude of practical cases in such a way that you can learn new skills as if you were dealing with real patients.*



# 02 Objectives

This Postgraduate Certificate in Clinical Cardiac Ultrasound for Nursing is aimed at improving the nurse's professional performance and enhancing their ability to treat patients in emergency or intensive care situations.





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*Our goal is to offer our students the most complete program on the market so that they are able to excel and expand their knowledge and, therefore, become more efficient in their profession"*



### General Objective

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- Complete the nurse's educational program so that they are able to use echocardiographic imaging in the management of emergency situations and with critically ill patients, regardless of the environment in which they find themselves



*Acquire the most up-to-date knowledge in this field of work and apply advanced protocols in this intervention in your day-to-day work"*





## Specific Objectives

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- ◆ Explain the cardiac anatomy
- ◆ Describe the technical requirements of cardiac ultrasound
- ◆ Explain localization and visualization in pericardial windows
- ◆ Describe sonoanatomy and sonophysiology in cardiac ultrasound
- ◆ Explain the different structural alterations to identify in cardiac ultrasound
- ◆ Define the principles of hemodynamic ultrasound

03

# Course Management

The program includes in its teaching staff renowned experts in Clinical Ultrasound, who contribute their work experience to this program. 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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*Leading experts in the field are at the best university to help you achieve professional success”*

## Management



### Dr. Álvarez Fernández, Jesús Andrés

- ♦ Doctor of Medicine (PhD)
- ♦ Degree in Medicine and Surgery
- ♦ Specialist in Intensive Care Medicine.
- ♦ Attending Physician of Intensive Care Medicine and Major Burns University, Getafe University Hospital (Madrid)
- ♦ Collaborating Professor of the Master's Degree in Update on Intensive Care Medicine at the CEU Cardenal Herrera University of Valencia.
- ♦ Founding Member of the Ecoclub of SOMIAMA
- ♦ Collaborating Professor of SOCANECO

## Professors

### Dr. Flores Herrero, Ángel

- ♦ Degree in Medicine and Surgery
- ♦ Attending Physician of Vascular Surgery.
- ♦ Toledo Hospital Complex.
- ♦ Member of the American Society of Surgeons.
- ♦ Collaborating Professor at the Catholic University San Antonio de Murcia (UCAM)

### Dr. Fumadó Queral, Josep

- ♦ Degree in Medicine and Surgery
- ♦ Physician Specialist in Family Medicine.
- ♦ Primary Care Team in Amposta, Tarragona
- ♦ Professor of Clinical Ultrasound of the Spanish Society of General Medicine (SEMG).
- ♦ Collaborating Professor and Honorary Member of the Canary Society of Ultrasound (SOCANECO)

**Dr. Igeño Cano, José Carlos**

- ◆ Degree in Medicine and Surgery
- ◆ Specialist in Intensive Care Medicine.
- ◆ Head of Intensive Care and Emergency Services.
- ◆ San Juan de Dios Hospital, Cordoba
- ◆ Member of the HU-CI Project
- ◆ Creator and Director of Course of Ultrasound-guided Venous Canalization (CAVE)

**Dr. Vicho Pereira, Raúl**

- ◆ Degree in Medicine and Surgery
- ◆ Specialist in Intensive Care Medicine.
- ◆ Quirónsalud Palmaplanas Hospital, Palma de Mallorca
- ◆ President of the Spanish Society for Ultrasound in Critical Cases (ECOCRITIC)

**Dr. Osiniri Kippes, María Inés**

- ◆ Degree in Medicine and Surgery
- ◆ Pediatrician.
- ◆ Pediatrician, Pediatric Ultrasound and Pediatric Nephrology, Bofill Clinic, Girona
- ◆ Collaborating Professor at the Spanish School of Clinical Ultrasound.
- ◆ Member of the European Federation of Societies of Ultrasound in Medicine and Biology (EFSUMB)

**Dr. Jiménez Díaz, Fernando**

- ◆ Degree in Medicine and Surgery
- ◆ Specialist in Sport Medicine.
- ◆ Professor in the Faculty of Sports Sciences at the University of Castilla La Mancha
- ◆ Director of the International Chair of Musculoskeletal Ultrasound of the Catholic University of Murcia

**Dr. Vollmer Torrubiano, Iván**

- ◆ Degree in Medicine and Surgery
- ◆ Medical Specialist in Radiology.
- ◆ Clinic i Provincial University Hospital, Barcelona
- ◆ Director in the Specialist Degree in Thoracic Ultrasound at the Autonomous University of Barcelona.
- ◆ Collaborator of EcoClub of SOMIAMA and collaborator of SOCANECO

**Dr. Abril Palomares, Elena**

- ◆ Degree in Medicine and Surgery
- ◆ Specialist in Intensive Care Medicine.
- ◆ Attending Physician of Intensive Care Medicine and Major Burns Unit.
- ◆ University Hospital of Getafe, Madrid, Spain
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**Dr. Álvarez González, Manuel**

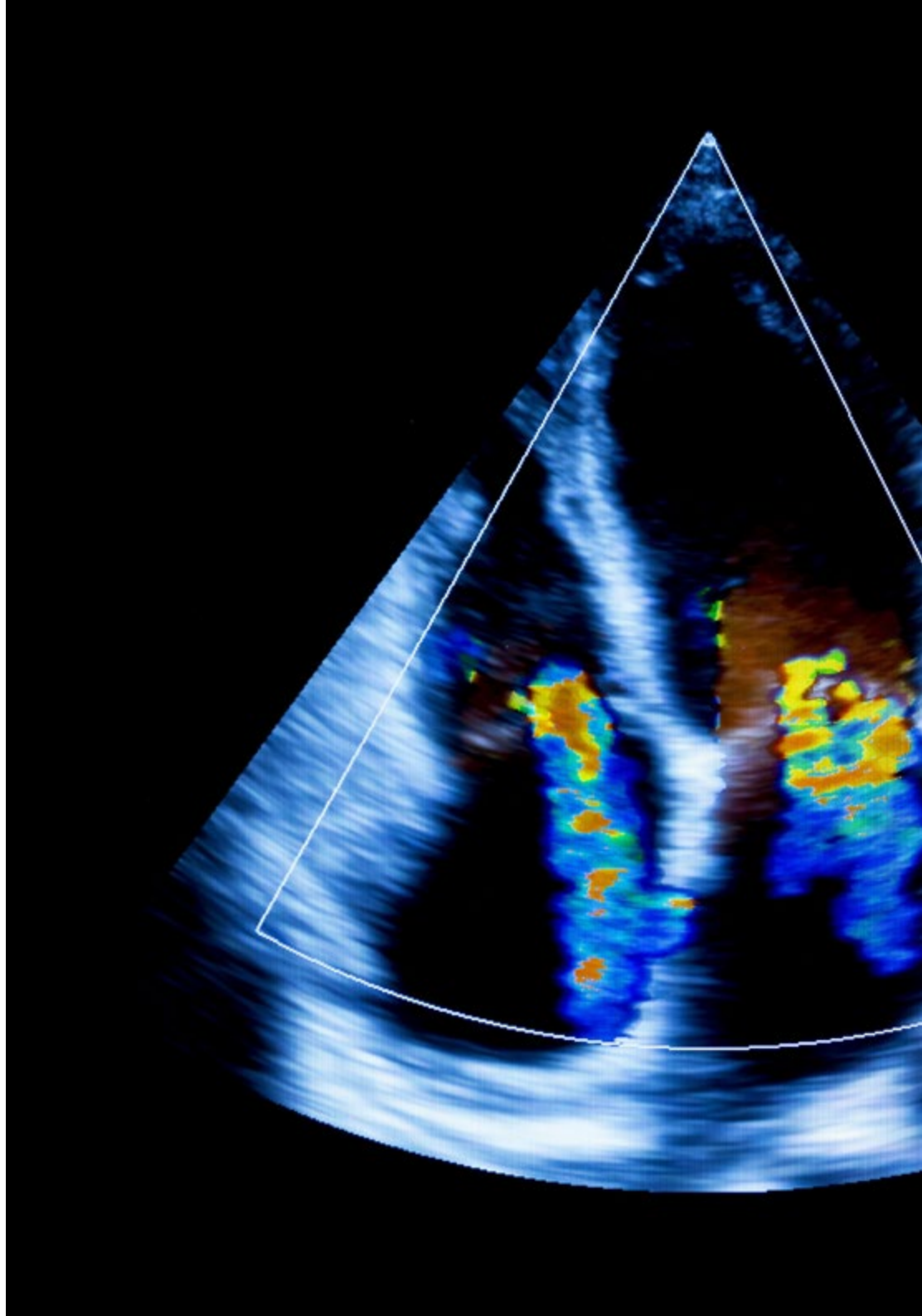
- ◆ Degree in Medicine and Surgery
- ◆ Specialist in Intensive Care Medicine.
- ◆ Attending Physician in Intensive Medicine.
- ◆ San Carlos Clinical University Hospital, Madrid.
- ◆ Founding Member of the Ecoclub of SOMIAMA

**Dr. Colinas Fernández, Laura**

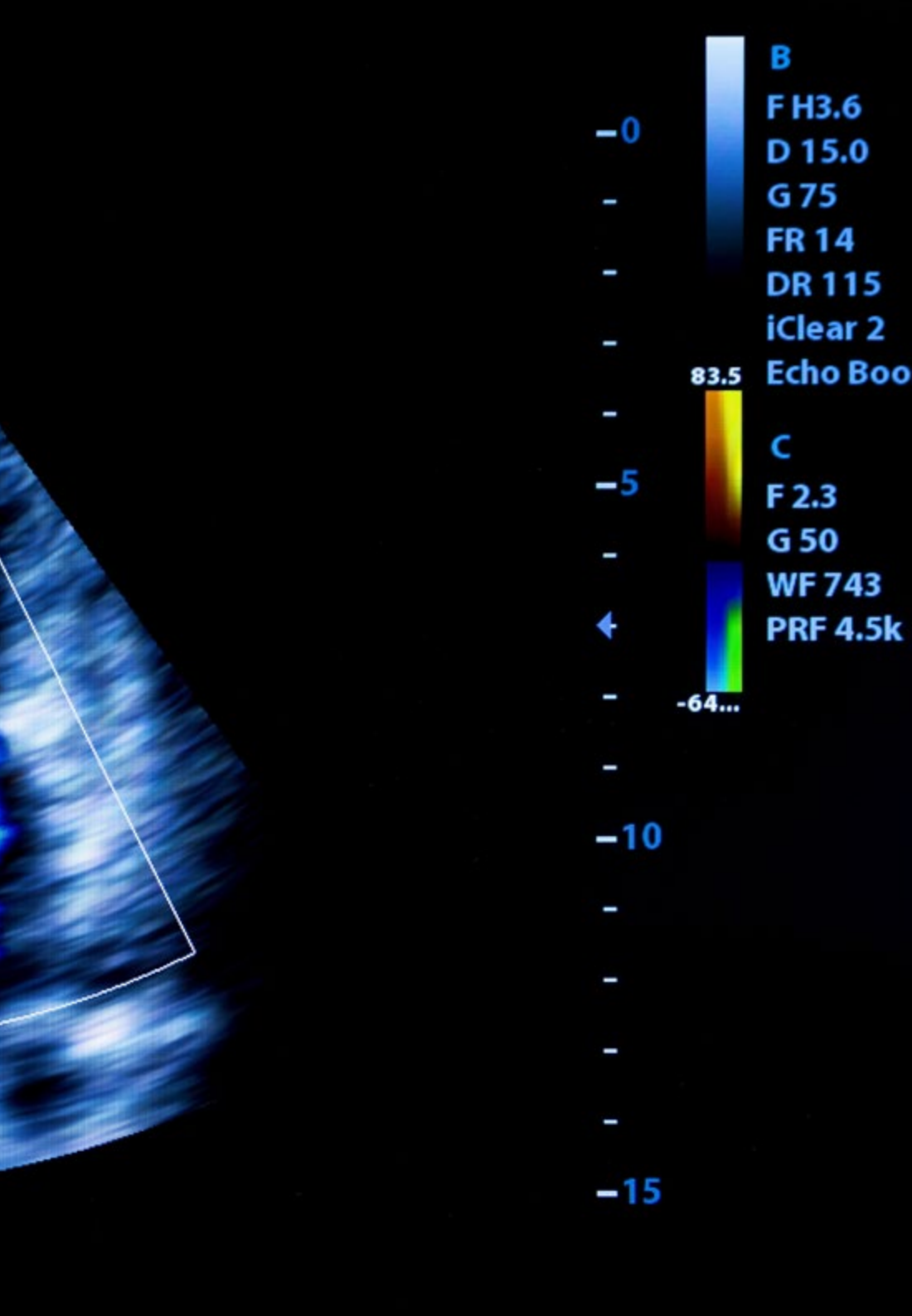
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- ◆ Specialist in Intensive Care Medicine.
- ◆ Attending Physician in Intensive Medicine.
- ◆ Toledo University Hospital Complex
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**Dr. Hernández Tejedor, Alberto**

- ◆ Degree in Medicine and Surgery
- ◆ Specialist in Intensive Care Medicine.
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- ◆ Alcorcón University Hospital Foundation( Madrid)
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**Dr. De la Calle Reviriego, Braulio**

- ◆ Degree in Medicine and Surgery
- ◆ Specialist in Intensive Care Medicine.
- ◆ Head of Department in Intensive Medicine and Transplants Coordinator.
- ◆ Gregorio Marañón General University Hospital, Madrid
- ◆ Collaborating Professor at Complutense University of Madrid
- ◆ Trainer in Brain Ultrasound, National Transplant Organization.

**Dr. Herrero Hernández, Raquel**

- ◆ Degree in Medicine and Surgery
- ◆ Specialist in Intensive Care Medicine.
- ◆ Attending Physician of Intensive Care Medicine and Major Burns Unit.
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**Dr. Lamarca Mendoza, María Pilar**

- ◆ Degree in Medicine and Surgery
- ◆ Attending Physician of Angiology and Vascular Surgery.
- ◆ Toledo Hospital Complex.

**Dr. López Cuenca, Sonia**

- ◆ Degree in Medicine and Surgery
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- ◆ Attending Physician of Intensive Care Medicine and Major Burns Unit.
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**Dr. López Rodríguez, Lucía**

- ♦ Degree in Medicine and Surgery
- ♦ Specialist in Intensive Care Medicine.
- ♦ Attending Physician of Intensive Care Medicine and Major Burns Unit.
- ♦ University Hospital of Getafe, (Madrid)
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**Dr. Martínez Crespo, Javier**

- ♦ Degree in Medicine and Surgery
- ♦ Specialist in Intensive Care Medicine.
- ♦ Radio Diagnostic Attending Physician.
- ♦ University Hospital of Getafe, (Madrid)
- ♦ Associate Professor at the European University of Madrid
- ♦ Collaborator of the Ecoclub of SOMIAMA

**Dr. Martínez Díaz, Cristina**

- ♦ Degree in Medicine and Surgery
- ♦ Specialist in Intensive Care Medicine.
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- ♦ University Hospital Prince of Asturias, Alcalá de Henares, Madrid
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**Dr. Mora Rangil, Patricia**

- ♦ Degree in Medicine and Surgery
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- ♦ Collaborating Professor of SOCANECO

**Dr. Ortuño Andériz, Francisco**

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- ♦ San Carlos Clinical University Hospital, Madrid.
- ♦ Collaborating Professor of the Master's Degree in Update on Intensive Care Medicine at the CEU Cardenal Herrera University of Valencia.
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**Dr. Palacios Ortega, Francisco de Paula**

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- ♦ Founding Member of the Ecoclub of SOMIAMA

**Dr. Pérez Morales, Luis Miguel**

- ◆ Degree in Medicine and Surgery
- ◆ Physician Specialist in Family Medicine.
- ◆ Primary Care Doctor.
- ◆ Arucas Health Center, Las Palmas de Gran Canaria.
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- ◆ Member of the European Federation of Societies of Ultrasound in Medicine and Biology (EFSUMB)

**Dr. Phillipps Fuentes, Federico**

- ◆ Degree in Medicine and Surgery
- ◆ Pediatrician.
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**Dr. Serna Gandía, María**

- ◆ Degree in Medicine and Surgery
- ◆ Specialist in Anaesthesiology and Resuscitation.
- ◆ Denia-Marina Salud Hospital, Denia, Alicante
- ◆ Secretary of the Spanish Society for Ultrasound in Critical Cases (ECOCRITIC)

**Dr. Villa Vicente, Gerardo**

- ◆ Degree in Medicine and Surgery
- ◆ Medical Specialist in Physical Education and Sports Medicine
- ◆ Professor of Physical Education and Sports at the University of León.
- ◆ Expert in Ultrasound MSK (SEMED-FEMEDE)

**Dr. Temprano Vázquez, Susana**

- ◆ Degree in Medicine and Surgery
- ◆ Specialist in Intensive Care Medicine.
- ◆ Attending Physician in Intensive Care Medicine.
- ◆ 12 de Octubre University Hospital, Madrid
- ◆ Founding Member of the Ecoclub of SOMIAMA

**Dr. Yus Teruel, Santiago**

- ◆ Degree in Medicine and Surgery
- ◆ Specialist in Intensive Care Medicine.
- ◆ Attending Physician in Intensive Medicine.
- ◆ La Paz- Carlos III University Hospital Complex, Madrid
- ◆ Member of the Ecoclub of SOMIAMA.

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, who are aware of the relevance of up-to-date education, and are committed to quality teaching using new educational technologies.



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*We have the most complete and up-to-date academic program in the market. We strive for educational excellence and we want you to achieve it too”*

## Module 1. Clinical Cardiac Ultrasound

- 1.1. Cardiac Anatomy
  - 1.1.1. Basic Three-Dimensional Anatomy
  - 1.1.2. Basic Cardiac Physiology
- 1.2. Technical Requirements to Perform a Cardiac Ultrasound
  - 1.2.1. Probes
  - 1.2.2. Characteristics of the Equipment used in a Cardiac Ultrasound
- 1.3. Cardiac Windows and Examination Techniques
  - 1.3.1. Windows and Maps Applied in Emergencies and Intensive Care Situations
  - 1.3.2. Basic Doppler (Color, Pulsating, Continuous and Tissue Doppler)
- 1.4. Structural Alterations
  - 1.4.1. Basic Measures in Cardiac Ultrasound
  - 1.4.2. Thrombi
  - 1.4.3. Suspected Endocarditis
  - 1.4.4. Valvulopathies
  - 1.4.5. Pericardium
  - 1.4.6. How is an Ultrasound Reported in Emergency and Intensive Care Situations?
- 1.5. Hemodynamic Ultrasound
  - 1.5.1. Left Ventricular Hemodynamics
  - 1.5.2. Right Ventricular Hemodynamics
  - 1.5.3. Preload Dynamic Tests
- 1.6. Transesophageal Echocardiogram
  - 1.6.1. Technique
  - 1.6.2. Indications in Emergencies and Intensive Care Cases
  - 1.6.3. Ultrasound-Guided Study of Cardioembolism





“ *A unique training opportunity  
to advance your career”*

# 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 Nursing School we use the Case Method

In a given situation, what should a professional do? 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. Nurses learn better, faster, and more sustainably over time.

*With TECH, nurses can experience a learning methodology 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, in an attempt to recreate the real conditions in professional nursing 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. Nurses 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 nursing professional to better integrate knowledge acquisition into the hospital setting or primary care.
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 case studies with a 100% online learning system based on repetition combining a minimum of 8 different elements in each lesson, which is a real revolution compared to the simple study and analysis of cases.



*The nurse 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 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 we have trained more than 175,000 nurses with unprecedented success in all specialities regardless of practical workload. 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 really 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.



### Nursing 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 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 them as many times as you want.



### 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.

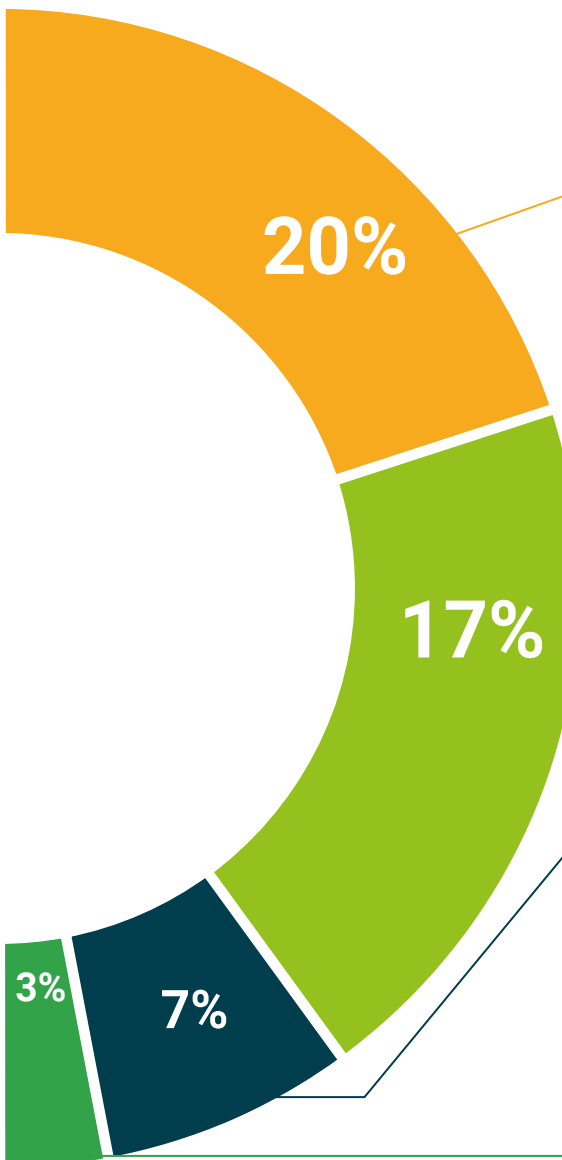
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



### 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 suggesting that observing third-party experts can be useful.

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 Clinical Cardiac Ultrasound for Nursing guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.





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*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”*

This **Postgraduate Certificate in Clinical Cardiac Ultrasound for Nursing** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** via tracked delivery\*.

The diploma issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Certificate, and meets the requirements commonly demanded by labor exchanges, competitive examinations and professional career evaluation committees.

Title: **Postgraduate Certificate in Clinical Cardiac Ultrasound for Nursing**

Official N° of Hours: **100 h.**



\*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.

future  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning



**Postgraduate Certificate**  
Clinical Cardiac  
Ultrasound for Nursing

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

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