

# Postgraduate Certificate

## Clinical Cardiac Ultrasound





## Postgraduate Certificate Clinical Cardiac Ultrasound

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

Website: [www.techitute.com/pk/medicine/postgraduate-certificate/clinical-cardiac-ultrasound](http://www.techitute.com/pk/medicine/postgraduate-certificate/clinical-cardiac-ultrasound)

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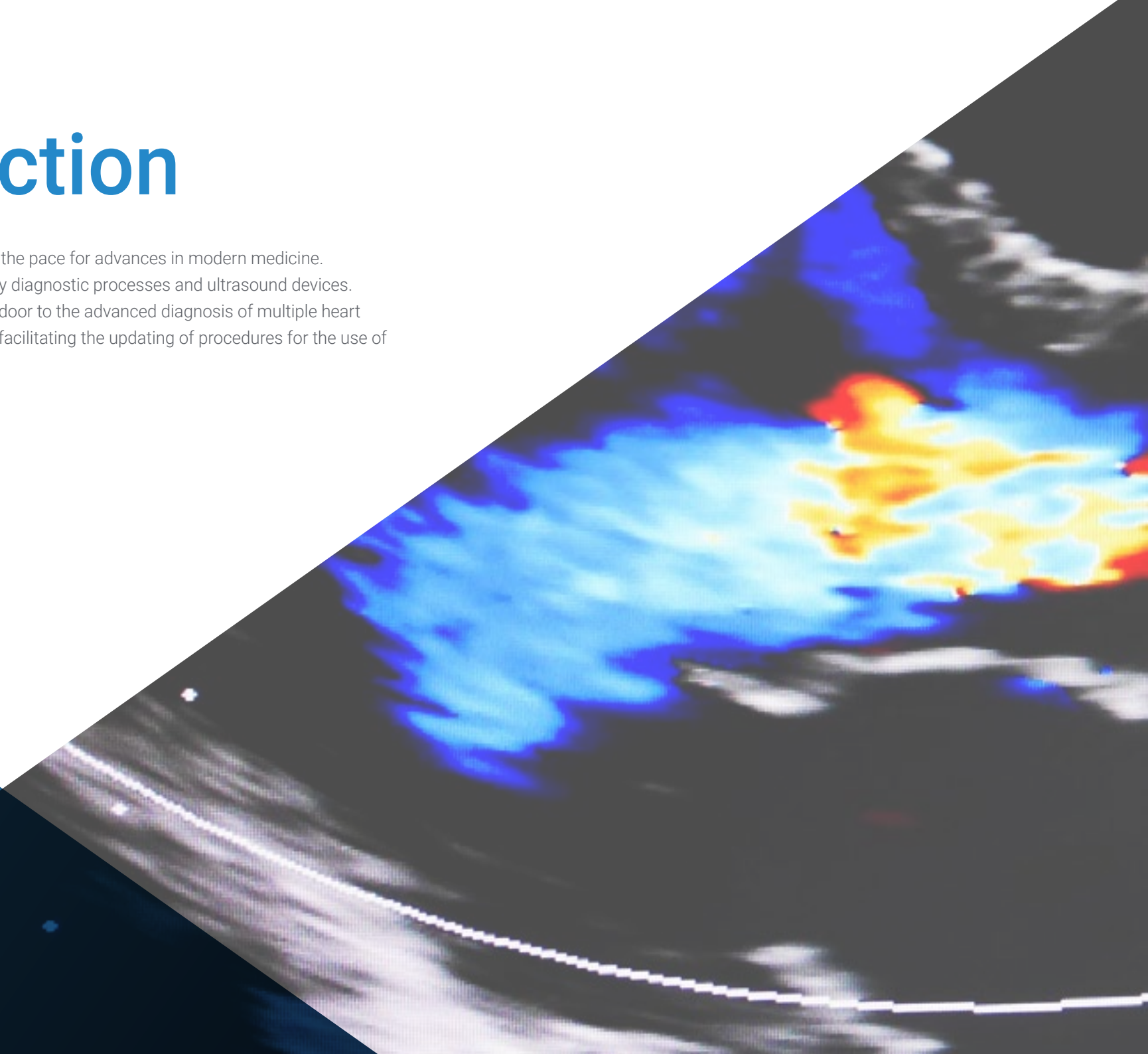
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# 01

# Introduction

Technological advances are setting the pace for advances in modern medicine. This is the case of cardiac pathology diagnostic processes and ultrasound devices. Clinical cardiac ultrasound opens a door to the advanced diagnosis of multiple heart diseases. This program is aimed at facilitating the updating of procedures for the use of ultrasound in cardiac pathology.



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*Improve your knowledge through this program, where you will find the best didactic material with real clinical cases. Learn here about the latest advances in the specialty to be able to perform a quality medical practice”*

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

In the use of ultrasound there is great dependence on the operator and the method of performance, with numerous studies recording the need and desire for regulated specialization for specialists and physicians in specialization, especially for care

Like any other aspect, cardiac ultrasound requires an initial basic specialization and a specialized advanced specialization, geared to the activity to be developed. However, no organization currently offers a top-level university course that completes the educational pathway in clinical cardiac ultrasound.

This **Postgraduate Certificate in Clinical Cardiac Ultrasound** is the most comprehensive and up-to-date scientific program on the market. The most important features of the University Course are:

- Clinical cases presented by experts in ultrasound imaging. The graphic, schematic, and eminently practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional practice.
- Diagnostic and therapeutic innovations in the use of ultrasound.
- Algorithm-based interactive learning system for decision-making in the presented clinical situations.
- With a special emphasis on evidence-based medicine and research methodologies in the use of cardiac ultrasound.
- 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.



*Expand your knowledge through the Postgraduate Certificate in Clinical Cardiac Ultrasound, in a practical way and adapted to your needs”*

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*This Postgraduate Certificate may be the best investment you can make when choosing a refresher program for two reasons: in addition to updating your knowledge on Clinical Cardiac Ultrasound, you will obtain a postgraduate certificate from TECH Technological University"*

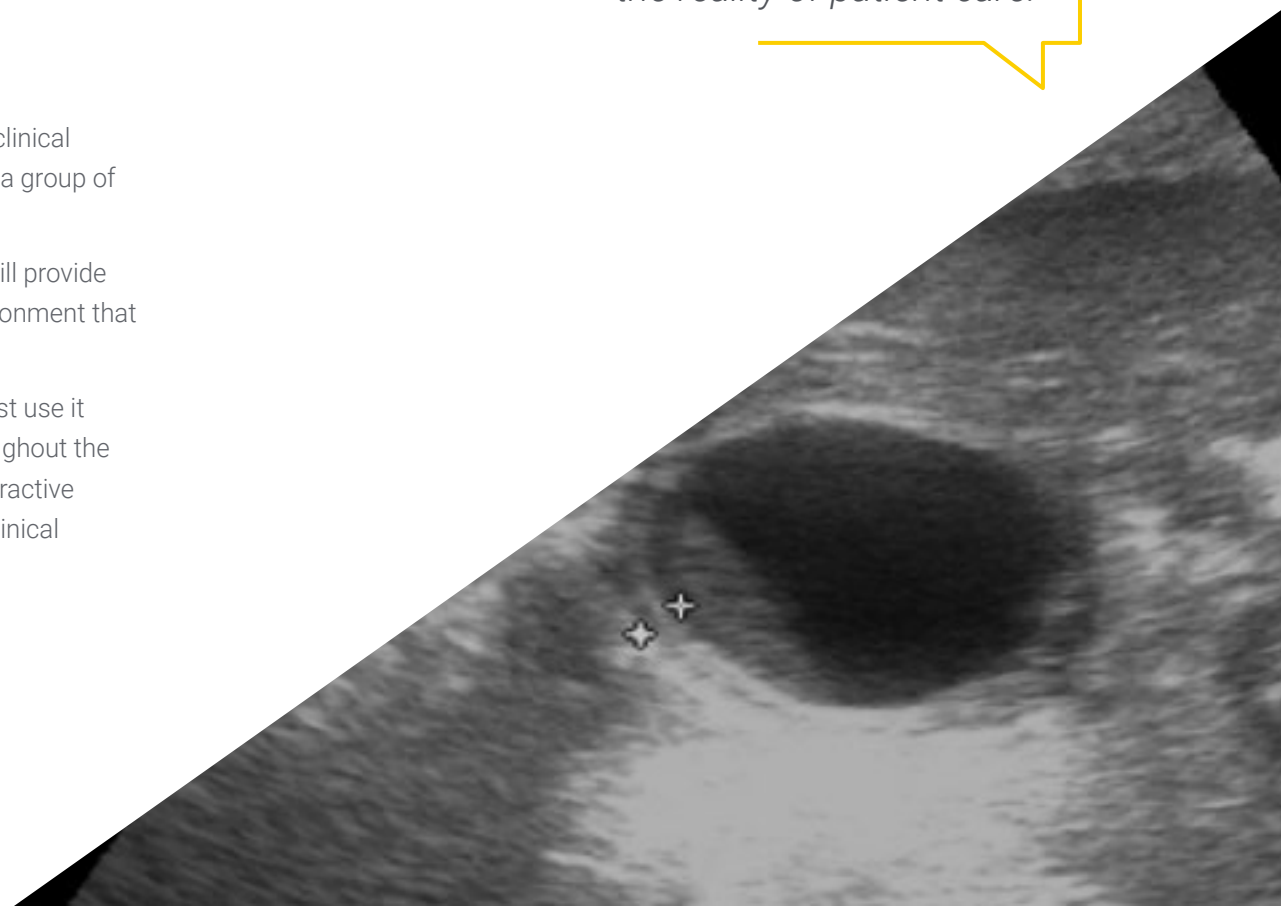
Forming part of the teaching staff is a group of professionals in the field of clinical ultrasound who bring to this specialization their work experience, as well as a group of renowned specialists, recognised by esteemed scientific communities.

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.

Problem-Based Learning underpins this program design, and the doctor must use it to try and solve the different professional practice situations that arise throughout the University Course. For this reason, you 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.

*This Postgraduate Certificate offers training in simulated environments, which provides an immersive learning experience designed to train for real-life situations.*

*It includes clinical cases to bring the program's degree as close as possible to the reality of patient care.*



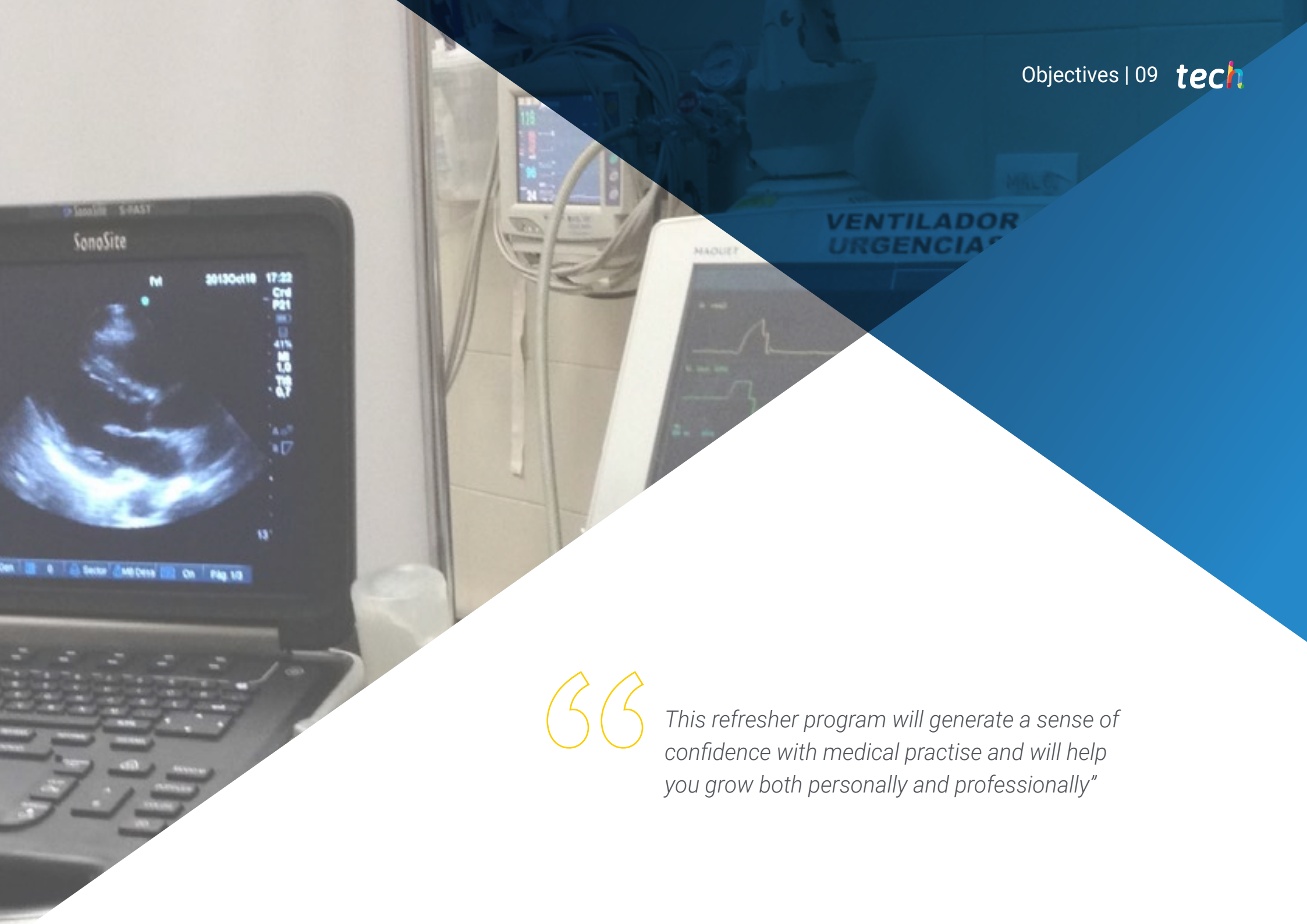


# 02 Objectives

The program's primary objective is focused on theoretical and practical learning, so that the medical professional is able to master the use of clinical cardiac imaging practically and rigorously.







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*This refresher program will generate a sense of confidence with medical practise and will help you grow both personally and professionally”*



## General Objective

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- ♦ The main objective of this program in ultrasound is to complete the educational pathway of the physician to be able to use ultrasound imaging in diagnostic and therapeutic processes, for the management of emergency situations and critical patients, whatever the environment they are in.



## 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.





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*Seize the opportunity and take the step to get up to date on the latest developments in clinical cardiac ultrasound”*



# 03

# Course Management

This program includes highly regarded health professionals in the field of clinical ultrasound in its teaching staff, who bring the experience of their work to this specialization. In addition, renowned specialists, members of prestigious national and international scientific communities, are involved in designing and preparing the program.



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*Learn the latest advances in clinical cardiac ultrasound from leading professionals"*

## Management



### Dr. Álvarez Fernández, Jesús Andrés

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





# 04

## Structure and Content

The structure of the contents has been designed by a team of professionals who recognise the implications of specialization in daily medical praxis, aware of the relevance of current specialization to treat the patient with oncologic thoracic pathologies and are committed to quality teaching using new educational technologies.



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*This Postgraduate Certificate in Clinical Cardiac Ultrasound is the most comprehensive and up-to-date scientific program on the market”*

### Module 1. Cardiac Anatomy

- 1.1. Basic Three-Dimensional Anatomy.
- 1.2. Basic Cardiac Physiology.

### Module 2. Technical Requirements to Perform Cardiac Ultrasound

- 2.1. Probes.
- 2.2. Characteristics of the Equipment used in a Cardiac Ultrasound.

### Module 3. Cardiac Windows and Examination Techniques

- 3.1. Windows and Maps Applied in Emergencies and Intensive Care Situations.
- 3.2. Basic Doppler (color, pulsating, continuous and tissue Doppler).

### Module 4. Structural Alterations

- 4.1. Basic Measures in Cardiac Ultrasound.
- 4.2. Thrombi.
- 4.3. Suspected Endocarditis.
- 4.4. Valvular Heart Disease.
- 4.5. Pericardium.
- 4.6. How is an ultrasound reported in emergency and intensive care?

### Module 5. Hemodynamic Ultrasound

- 5.1. Left Ventricular Hemodynamics.
- 5.2. Right Ventricular Hemodynamics.
- 5.3. Preload Dynamic Tests.

### Module 6. Transesophageal Echocardiogram

- 6.1. Techniques
- 6.2. Indications in Emergencies and Intensive Care Cases.
- 6.3. Ultrasound-Guided Study of Cardioembolism.







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

05

# Methodology

This training program provides you with a different way of learning. Our methodology uses a cyclical learning approach: *Re-learning*.

This teaching system is used in the most prestigious medical schools in the world, and major publications such as the *New England Journal of Medicine* have considered it to be one of the most effective.





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*Discover Re-learning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## At TECH we use the Case Method

In a given situation, what would you do? Throughout the program, you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

*With TECH you can experience a way of learning that is shaking the foundations of traditional universities around the world.*



According to Dr. 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 program you will have access to the best educational material, prepared with you in mind:



#### Study Material

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

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



#### Latest Techniques and Procedures on Video

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



#### Interactive Summaries

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

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



#### Additional Reading

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







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

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



**Testing & Re-Testing**

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



**Classes**

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

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



**Quick Action Guides**

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



06

# Certificate

The Postgraduate Certificate in Clinical Cardiac Ultrasound guarantees you, in addition to the most rigorous and updated specialization, access to a Postgraduate Certificate issued by **TECH Technological University**.



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

This **Postgraduate Certificate in Clinical Cardiac Ultrasound** is the most comprehensive and up-to-date scientific program on the market.

After the student has passed the evaluations, they will receive by mail with acknowledgment of receipt their corresponding **Postgraduate Certificate** issued by **TECH Technological University**.

The certificate issued by **TECH Technological University** will specify the qualification obtained through 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**

ECTS: **7**

Official Number of Hours: **175**



\*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.



health future  
confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present quality  
development languages  
virtual classroom



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