Postgraduate Diploma

Clinical Cardiovascular Ultrasound in Emergencies and Intensive Care for Nursing

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Postgraduate Diploma

Clinical Cardiovascular Ultrasound in Emergencies and Intensive Care for Nursing

- Modality: **online**
- Duration: **6 months**
- Certificate: **TECH Global University**
- Credits: **19 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: **www.techtitute.com/us/nursing/postgraduate-diploma/postgraduate-diploma-clinical-cardiovascular-ultrasound-emergencies-intensive-care-nursing**

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01

Introduction

Clinical ultrasound is an advanced technique that allows for improved diagnoses and, therefore, improved treatments of patients with different pathologies. In addition, its advances in recent decades have allowed for its increased use in the cardiovascular department. For this reason, it is necessary to have nurses who are qualified to use it. Don't miss this opportunity and improve your skills in the field in order to give a boost to your career.

We offer you the best specialization of the moment so that you can improve your qualifications as a nurse”

For the work of emergency and intensive care nurses, it is essential that they have a perfect knowledge of clinical cardiovascular ultrasound, which will allow them to perform their work more effectively. Specifically, by studying this specialization they will be trained in the use of ultrasound devices in the management of emergency and critical care situations, with total guarantees of effectiveness and confidence.

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. Nowadays, 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 Diploma, 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 training, the student will have the opportunity to combine their studies with the rest of their daily obligations, so that they will be able to improve their training in a comfortable way.

This **Postgraduate Diploma in Clinical Cardiovascular Ultrasound in Emergencies and Intensive Care for Nursing** contains the most complete and up-to-date scientific program on the market. The most important features 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
- Latest developments in Clinical Cardiovascular Ultrasound in Emergencies and Intensive Care
- 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 Diploma is the best investment you can make when choosing a specialization course for two reasons: you will acquire the best and most up-to-date specialization in Clinical Cardiovascular Ultrasound in Emergencies and Intensive Care for Nursing, and you will obtain a Postgraduate Diploma issued by TECH Global University"

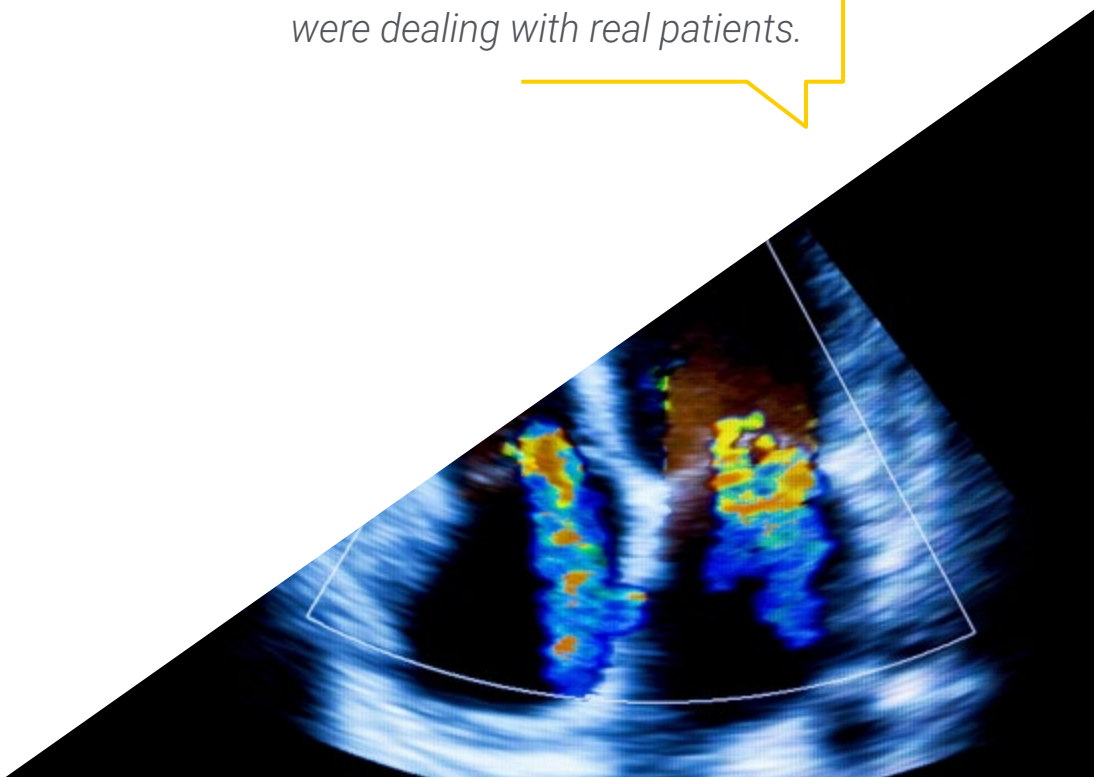
Our trainings have the best teaching methodology and the latest didactic tools, which will allow you to study from home, but without losing the possibilities offered by on-site classes.

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.

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 physician will be assisted by an innovative interactive video system created by renowned and experienced experts in the field of clinical cardiovascular ultrasound in emergencies and intensive care, who have extensive teaching experience.



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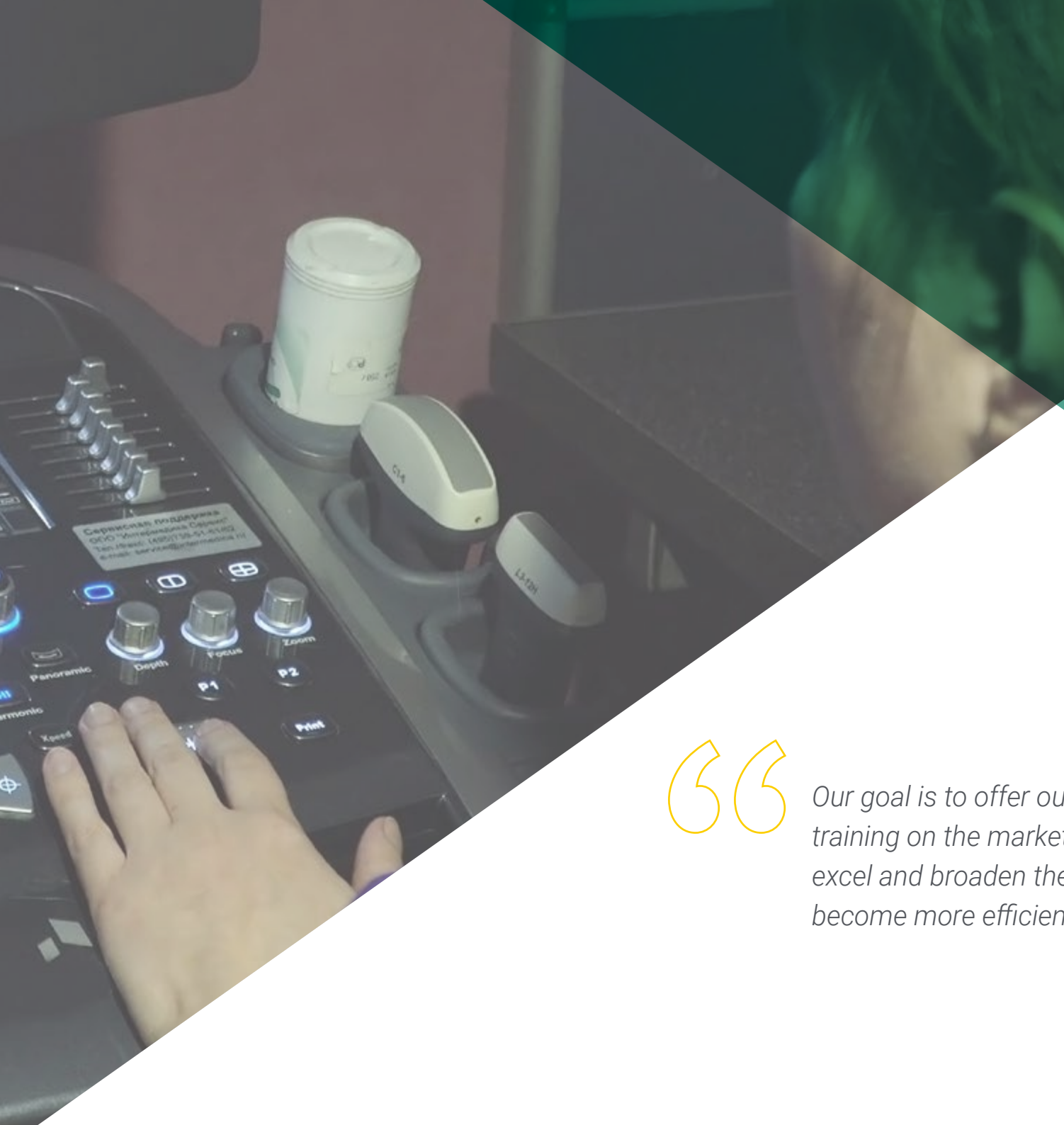
Objectives

This Postgraduate Diploma in Clinical Cardiovascular Ultrasound in Emergencies and Intensive Care for Nursing is aimed at enhancing the physician's ability to diagnose and treat patients in emergency or intensive care situations.

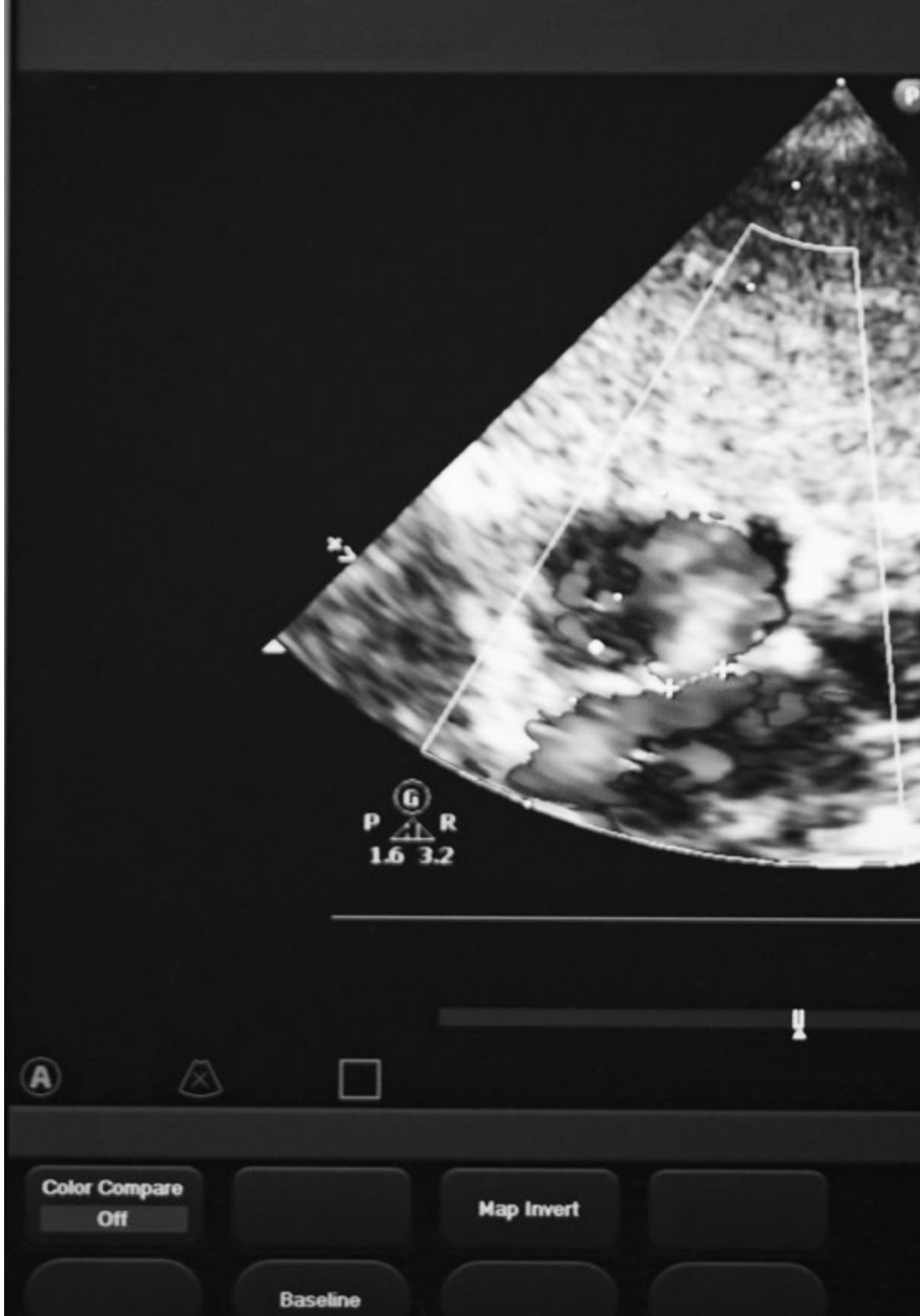


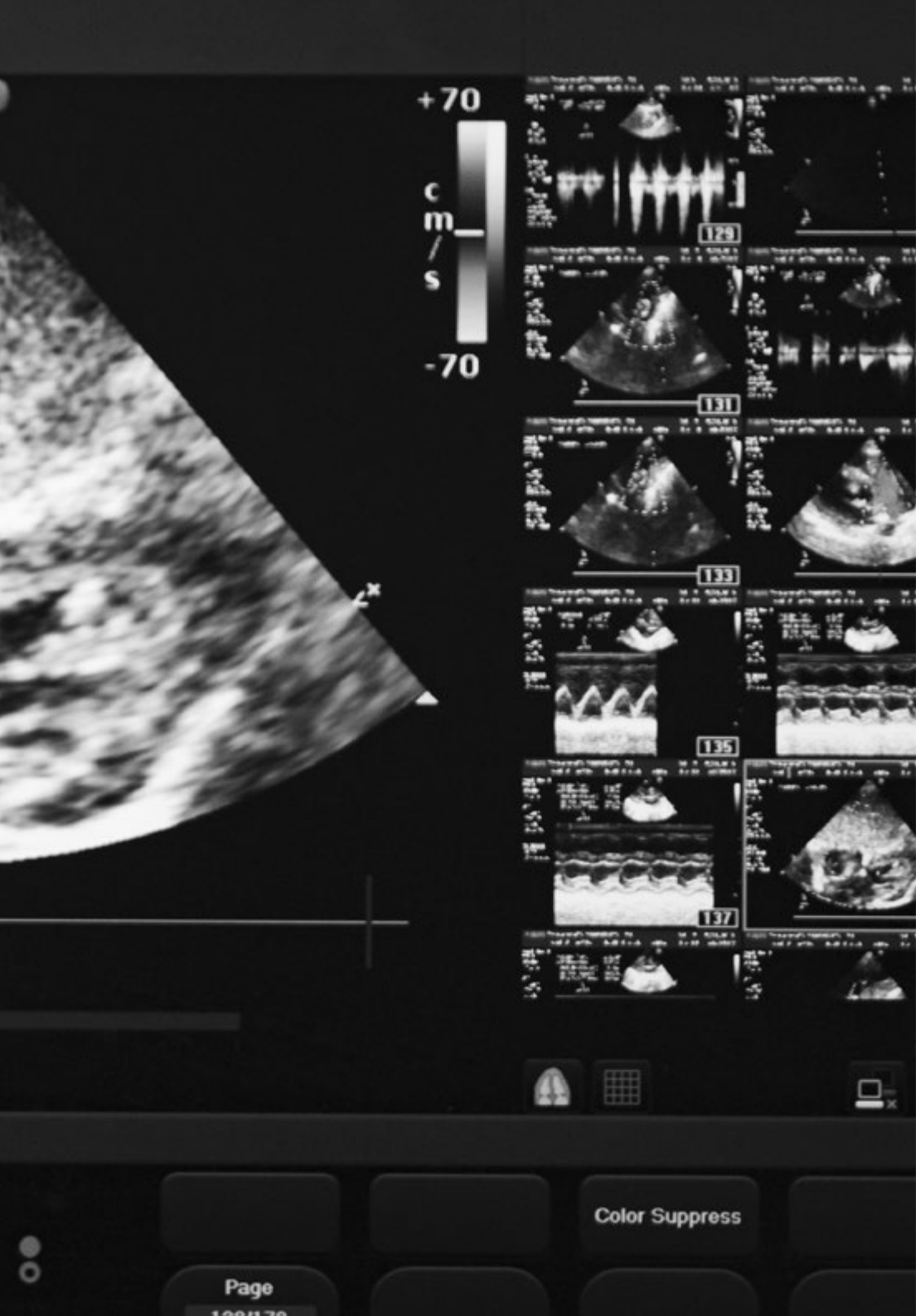
Our goal is to offer our students the most complete training on the market so that they are able to excel and broaden their knowledge and, therefore, become more efficient in their profession"

General Objective

- Update the nurses' knowledge in the processes of using ultrasound devices for the management of cardiovascular pathological conditions in the patient, specifically in emergency situations and in 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

Module 1. Ultrasound Imaging

- Define the physical principles that are involved in ultrasound imaging
- Establish an appropriate ultrasound sequence for each examination of a patient
- Explain the different ultrasound modes
- Define the different types of ultrasound and their applications
- Describe the different ultrasound maps
- Explain the principles of econavigation

Module 2. Clinical Cardiac Ultrasound

- 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

Module 3. Clinical Vascular Ultrasound

- Explain the vascular anatomy
- Describe the technical requirements of vascular ultrasounds
- Explain the examination technique for vascular ultrasounds
- Explain the principles of ultrasound for the main thoracoabdominal vessels
- Explain the principles of ultrasounds of the supra-aortic trunks
- Explain the principles of ultrasound of peripheral arterial circulation

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.

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. 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. Colinas Fernández, Laura

- Degree in Medicine and Surgery
- Specialist in Intensive Care Medicine
- Attending Physician in Intensive Medicine
- Toledo University Hospital Complex
- Member of the Spanish Society for Ultrasound in Critical Cases (ECOCRITIC)

Dr. Lamarca Mendoza, María Pilar

- Degree in Medicine and Surgery
- Attending Physician ofAngiology and Vascular Surgery
- Toledo Hospital Complex

Dr. Martínez Díaz, Cristina

- Degree in Medicine and Surgery
- Specialist in Intensive Care Medicine
- Attending Physician in Intensive Care Medicine
- University Hospital Prince of Asturias, Alcalá de Henares, Madrid
- Member of the Ecoclub of SOMIAMA

Dr. Mora Rangil, Patricia

- Degree in Medicine and Surgery
- Specialist in Intensive Care Medicine
- Montecanal Clinic, Zaragoza
- Member of the Spanish Society for Ultrasound in Critical Cases (ECOCRITIC)

Dr. Núñez Reiz, Antonio

- Degree in Medicine and Surgery
- Specialist in Intensive Care Medicine
- Attending Physician in Intensive Medicine
- San Carlos Clinical University Hospital, Madrid
- Collaborating Professor in the Specialist Degree in Thoracic Ultrasound at the Autonomous University of Barcelona
- Founding Member and Attending Coordinator of the Ecoclub of SOMIAMA
- Collaborating Professor of SOCANECO

Dr. Palacios Ortega, Francisco de Paula

- 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)
- Collaborating Professor at the University of Murcia
- Founding Member of the Ecoclub of SOMIAMA

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)

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.

We have the most complete and up-to-date scientific program on the market. We strive for educational excellence and we want you to achieve it too"

Module 1. Ultrasound Imaging

1.1. Physical Principles |
- 1.1.1. Sounds and Ultrasound
- 1.1.2. Nature of Ultrasound
- 1.1.3. Interaction of Ultrasound with Matter
- 1.1.4. Concept of Ultrasound
- 1.1.5. Ultrasound Safety

1.2. Ultrasound Sequence
- 1.2.1. Ultrasound Emission
- 1.2.2. Tissue Interaction
- 1.2.3. Echo Formation
- 1.2.4. Echo Reception
- 1.2.5. Ultrasound Image Generation

1.3. Ultrasound Modes
- 1.3.1. Mode A
- 1.3.2. M-Mode
- 1.3.3. Mode B
- 1.3.4. Color Doppler
- 1.3.5. Angio-Doppler
- 1.3.6. Spectral Doppler
- 1.3.7. Combined Modes
- 1.3.8. Other Modalities and Techniques

1.4. Ecography
- 1.4.1. Console Ecograph Ultrasound Scanners
- 1.4.2. Portable Ecograph Ultrasound scanners
- 1.4.3. Specialized Ecograph Ultrasound Scanners
- 1.4.4. Transducers

1.5. Ultrasound Maps and Eco Navigation
- 1.5.1. Sagittal Plane
- 1.5.2. Transverse Plane
- 1.5.3. Coronal Plane
- 1.5.4. Oblique Planes
- 1.5.5. Ultrasound Marking
- 1.5.6. Transducer Movements

Module 2. Clinical Cardiac Ultrasound

2.1. Cardiac Anatomy
- 2.1.1. Basic Three-Dimensional Anatomy
- 2.1.2. Basic Cardiac Physiology

2.2. Technical Requirements to Perform a Cardiac Ultrasound
- 2.2.1. Probes
- 2.2.2. Characteristics of the Equipment used in a Cardiac Ultrasound

2.3. Cardiac Windows and Examination Techniques
- 2.3.1. Windows and Maps Applied in Emergencies and Intensive Care Situations
- 2.3.2. Basic Doppler (Color, Pulsating, Continuous and Tissue Doppler)

2.4. Structural Alterations
- 2.4.1. Basic Measures in Cardiac Ultrasound
- 2.4.2. Thrombi
- 2.4.3. Suspected Endocarditis
- 2.4.4. Valvulopathies
- 2.4.5. Pericardium
- 2.4.6. How is an Ultrasound Reported in Emergency and Intensive Care Situations?

2.5. Hemodynamic Ultrasound
- 2.5.1. Left Ventricular Hemodynamics
- 2.5.2. Right Ventricular Hemodynamics
- 2.5.3. Preload Dynamic Tests

2.6. Transesophageal Echocardiogram
- 2.6.1. Technique
- 2.6.2. Indications in Emergencies and Intensive Care Cases
- 2.6.3. Ultrasound-Guided Study of Cardioembolism

A unique training opportunity to advance your career"

Module 3. Clinical Vascular Ultrasound

3.1. Anatomy Recap
- 3.1.1. Venous Vascular Anatomy of the Upper Limbs
- 3.1.2. Arterial Vascular Anatomy of the Upper Limbs
- 3.1.3. Venous Vascular Anatomy of the Lower Limbs
- 3.1.4. Arterial Vascular Anatomy of the Lower Limbs

3.2. Technical Requirements
- 3.2.1. Ultrasound Scanners and Probes
- 3.2.2. Curve Analysis
- 3.2.3. Image-Color Media
- 3.2.4. Echo Contrasts

3.3. Examination Technique
- 3.3.1. Positioning
- 3.3.2. Insonation. Examining Technique
- 3.3.3. Study of Normal Curves and Speeds

3.4. Large Thoracoabdominal Vessels
- 3.4.1. Venous Vascular Anatomy of the Abdomen
- 3.4.2. Arterial Vascular Anatomy of the Abdomen
- 3.4.3. Abdomino-Pelvic Venous Pathology
- 3.4.4. Abdomino-Pelvic Arterial Pathology

3.5. Supra-Aortic Trunks
- 3.5.1. Venous Vascular Anatomy of the Supra-Aortic Trunks
- 3.5.2. Arterial Vascular Anatomy of the Supra-Aortic Trunks
- 3.5.3. Venous Pathology of the Supra-Aortic Trunks
- 3.5.4. Arterial Pathology of the Supra-Aortic Trunks

3.6. Peripheral Arterial and Venous Circulation
- 3.6.1. Venous Pathology of Lower and Upper Limbs
- 3.6.2. Arterial Pathology of Lower and Upper Limbs

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.

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:

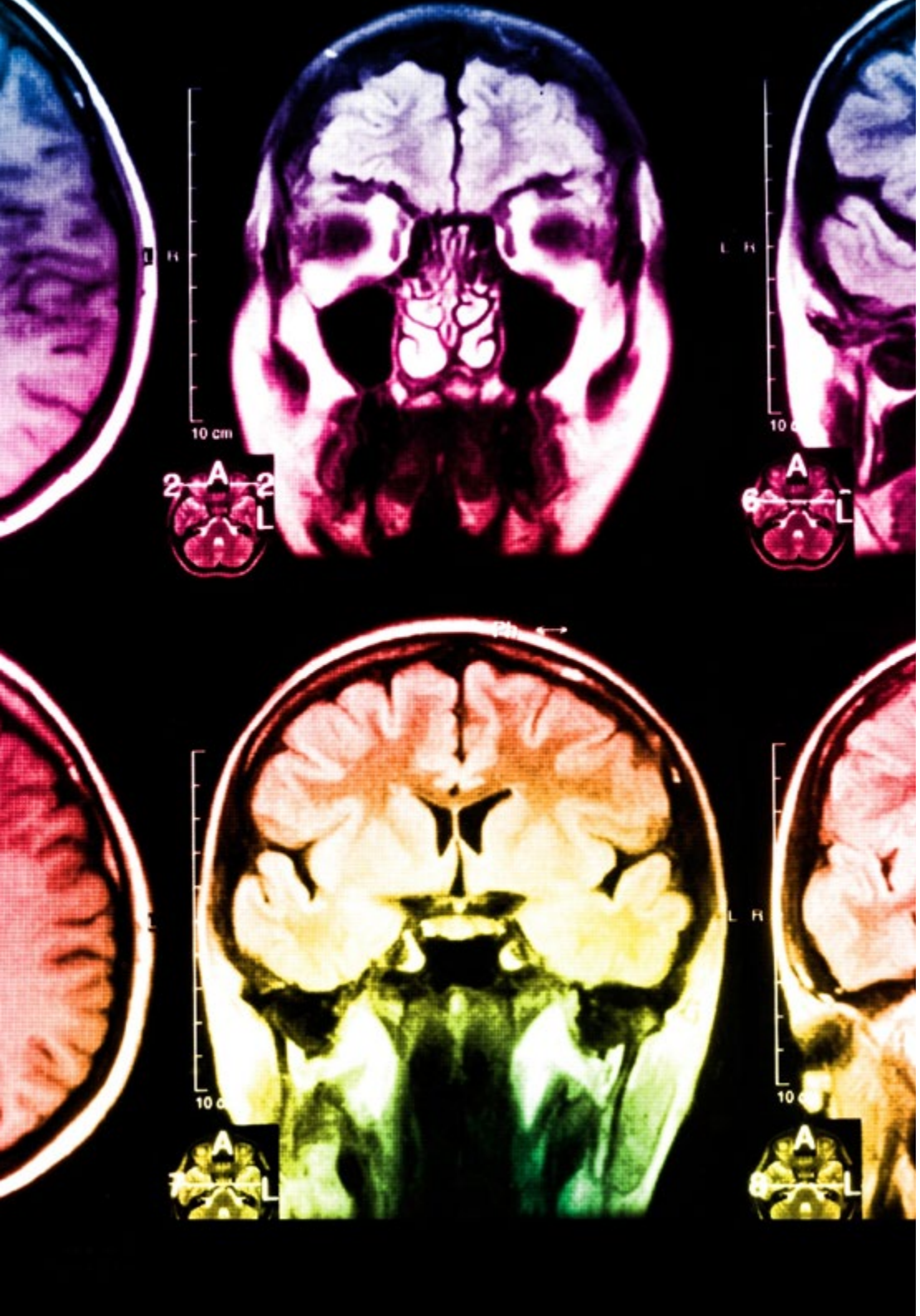
1. Nurses who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the nursing professional to better integrate knowledge acquisition into 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.

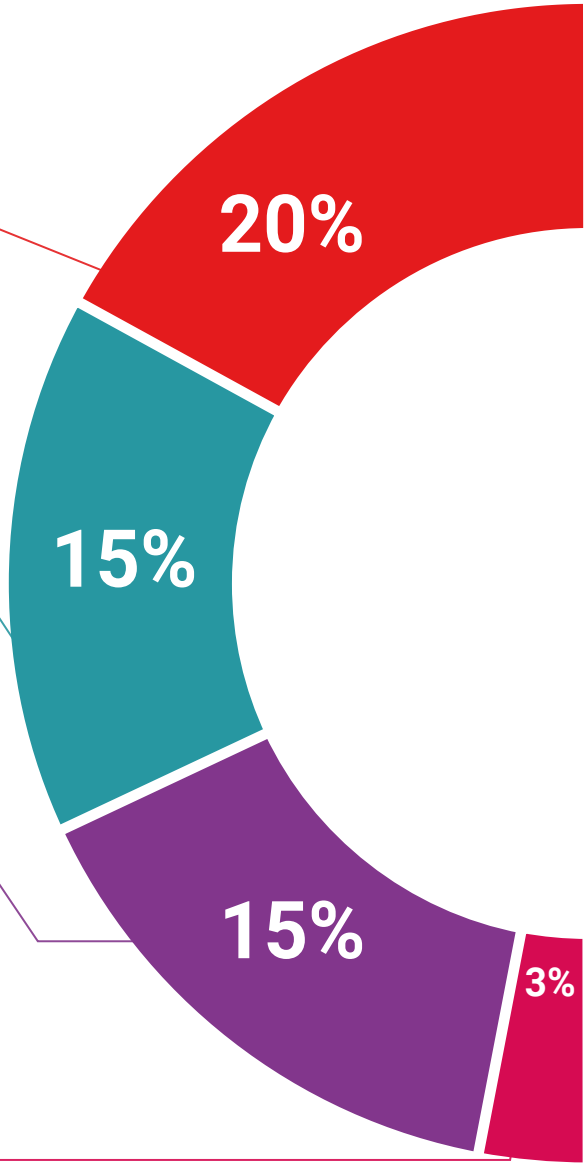
Interactive Summaries

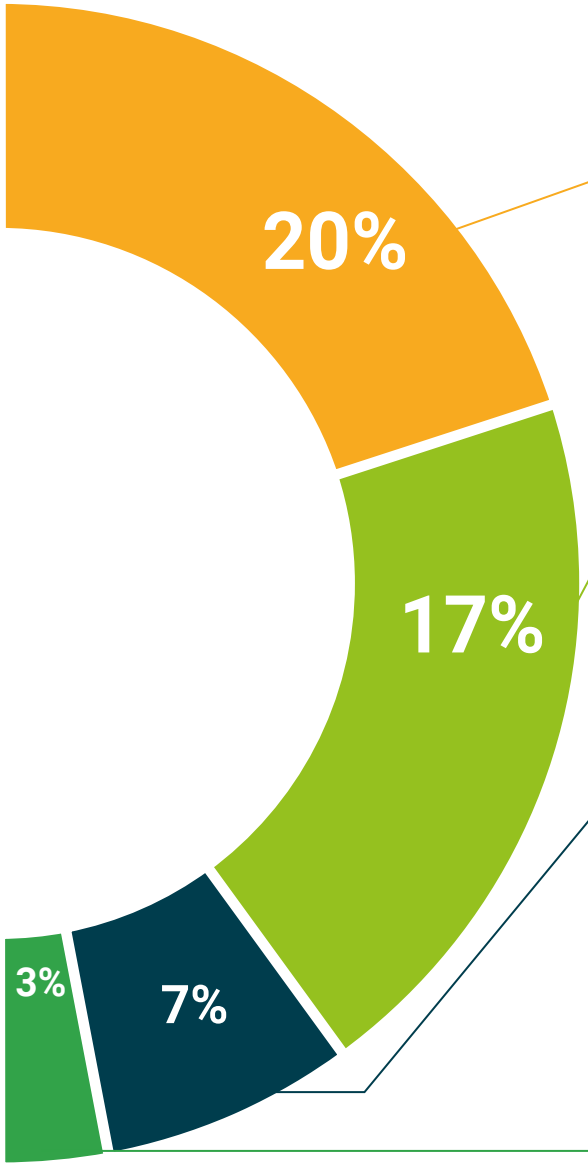
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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 Diploma in Clinical Cardiovascular Ultrasound in Emergencies and Intensive Care for Nursing guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University.

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

This program will allow you to obtain your **Postgraduate Diploma in Clinical Cardiovascular Ultrasound in Emergencies and Intensive Care for Nursing** 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.

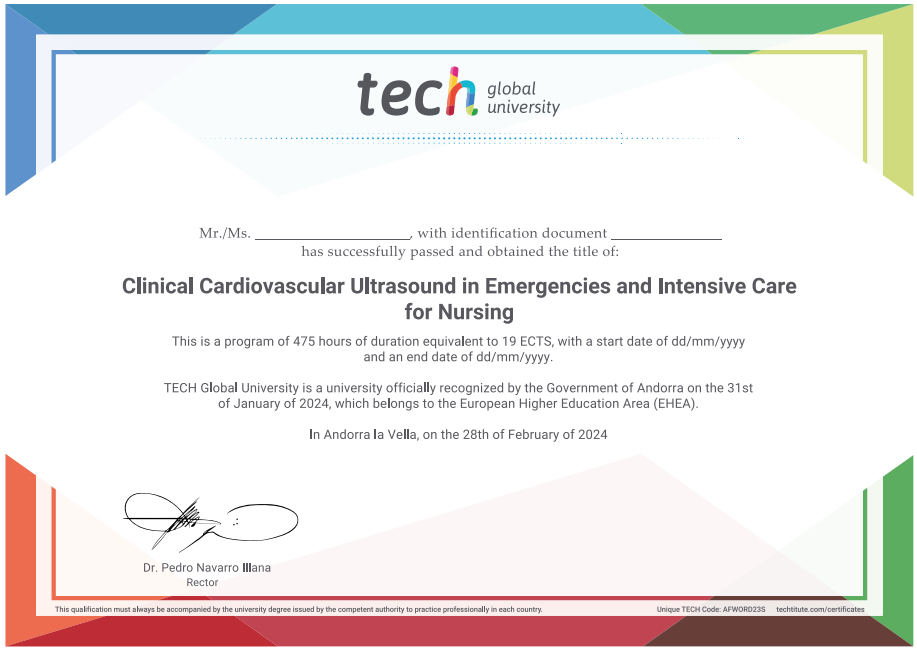
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Clinical Cardiovascular Ultrasound in Emergencies and Intensive Care for Nursing**

Modality: **online**

Duration: **6 months**

Accreditation: **19 ECTS**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Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Clinical Cardiovascular Ultrasound in Emergencies and Intensive Care for Nursing

This is a program of 475 hours of duration equivalent to 19 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

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

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