Postgraduate Diploma

Thoracic and Vascular Ultrasound for Nursing

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Postgraduate Diploma

Thoracic and Vascular Ultrasound for Nursing

Course Modality: **Online**
Duration: **6 months**
Certificate: **TECH Technological University**
Official Nº of hours: **450 h.**
Website: **www.techtitute.com/nursing/postgraduate-diploma/postgraduate-diploma-thoracic-vascular-ultrasound-nursing**

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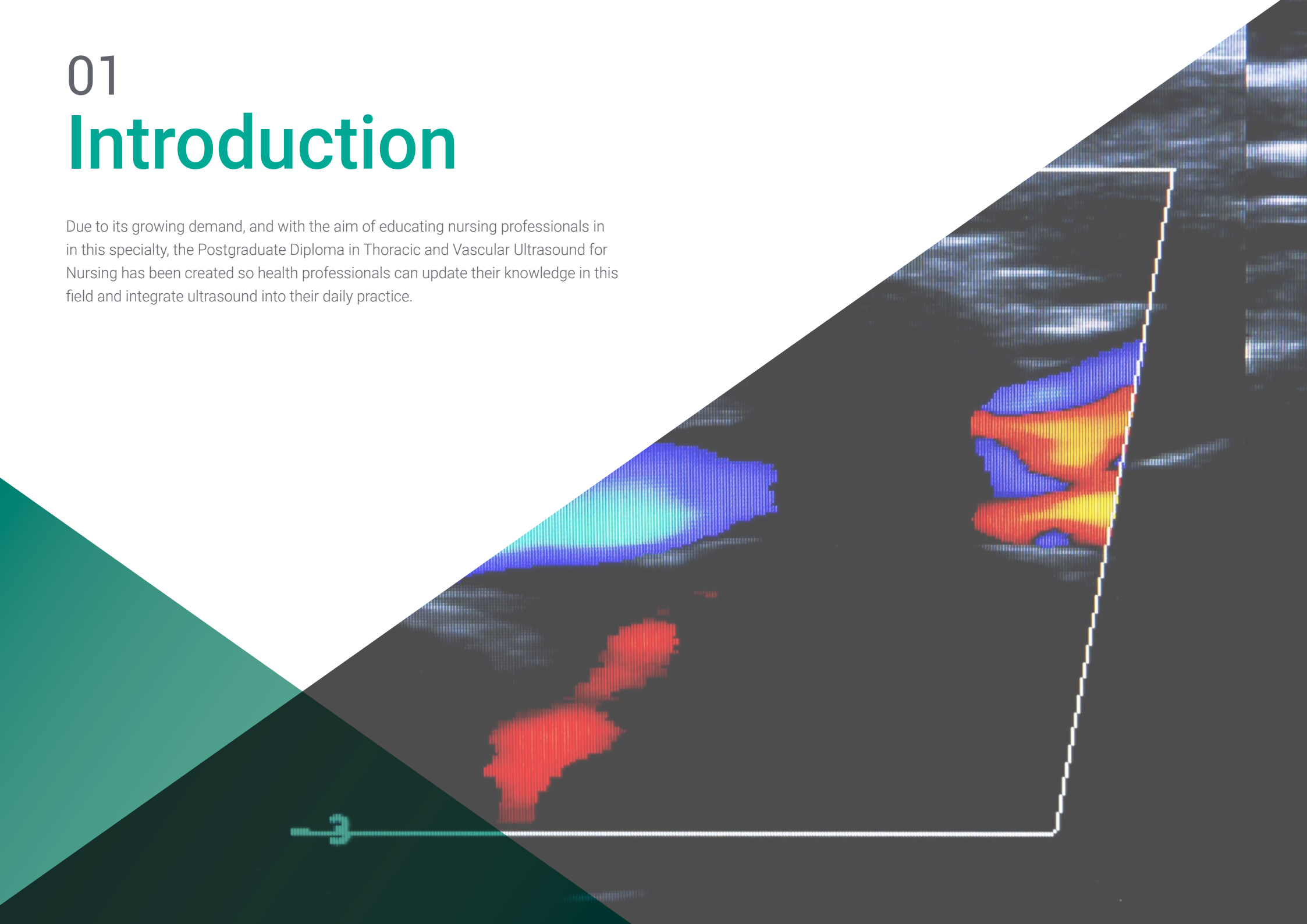
01

Introduction

Due to its growing demand, and with the aim of educating nursing professionals in in this specialty, the Postgraduate Diploma in Thoracic and Vascular Ultrasound for Nursing has been created so health professionals can update their knowledge in this field and integrate ultrasound into their daily practice.



Technological advances have led to improved ultrasound scanners, which are becoming more useful in a variety of new situations"

Thoracic ultrasound is very useful in the assessment of diseases of the peripheral lung parenchyma, pleura, chest wall, diaphragm and mediastinum. Among its advantages are the ability to scan in real time and the possibility of performing the scan at the patient's bedside.

What is more, vascular ultrasound allows rapid detection of any irregularities in the blood vessels (arteries and veins), as well as in the blood flow, making it easier for health professionals to establish accurate diagnoses of the disease.

Thoracic and vascular ultrasound are among the most demanded disciplines in primary care. In recent years, it has become an indispensable tool in the physical examination of patients and for guiding diagnostic and therapeutic interventions.

Ultrasound is a safe, fast, reliable, innocuous and non-invasive test, well tolerated by patients, relatively low cost, and which has evolved into new, smaller and more accessible devices.

Primary care is undoubtedly one of the areas where Clinical Ultrasound is most widely used. Nursing professionals can benefit from Clinical Ultrasound to favorably influence diagnosing and treating different pathologies, improving patient safety, reducing waiting times and possible errors.

With this Postgraduate Diploma, students have the opportunity to take a program that brings together the most advanced and in-depth knowledge in the field, where a group of highly regarded professors with extensive international experience provides you with the most complete and up-to-date information on the latest advances and techniques on the use of ultrasound as an adjunct to physical examinations.

It endorses the latest advances in ultrasound with a robust and didactic teaching program, which positions it as a product of the highest scientific rigor at international level, aimed at health professionals. In addition, the program is based on a multidisciplinary approach to its subjects, which allows training and professional development in different areas.

This **Postgraduate Diploma in Thoracic and Vascular Ultrasound for Nursing** contains the most complete and up-to-date scientific program on the market. The most important features include:

- Numerous clinical cases presented by ultrasound experts
- 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
- New diagnostic-therapeutic developments on evaluation, diagnosis, and intervention in problems or disorders that can be addressed with ultrasound
- It contains practical exercises where the self-evaluation process can be carried out to improve learning
- An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course
- Special emphasis on evidence-based medicine and research methodologies in ultrasound processes
- Content that is accessible from any fixed or portable device with an Internet connection
- All of this will be complemented by theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments

We offer you the opportunity to train with a multitude of case studies so you can learn as if you were treating real patients"

You will have distinguished experts in the experts in the field, who will guide and advise you throughout format process"

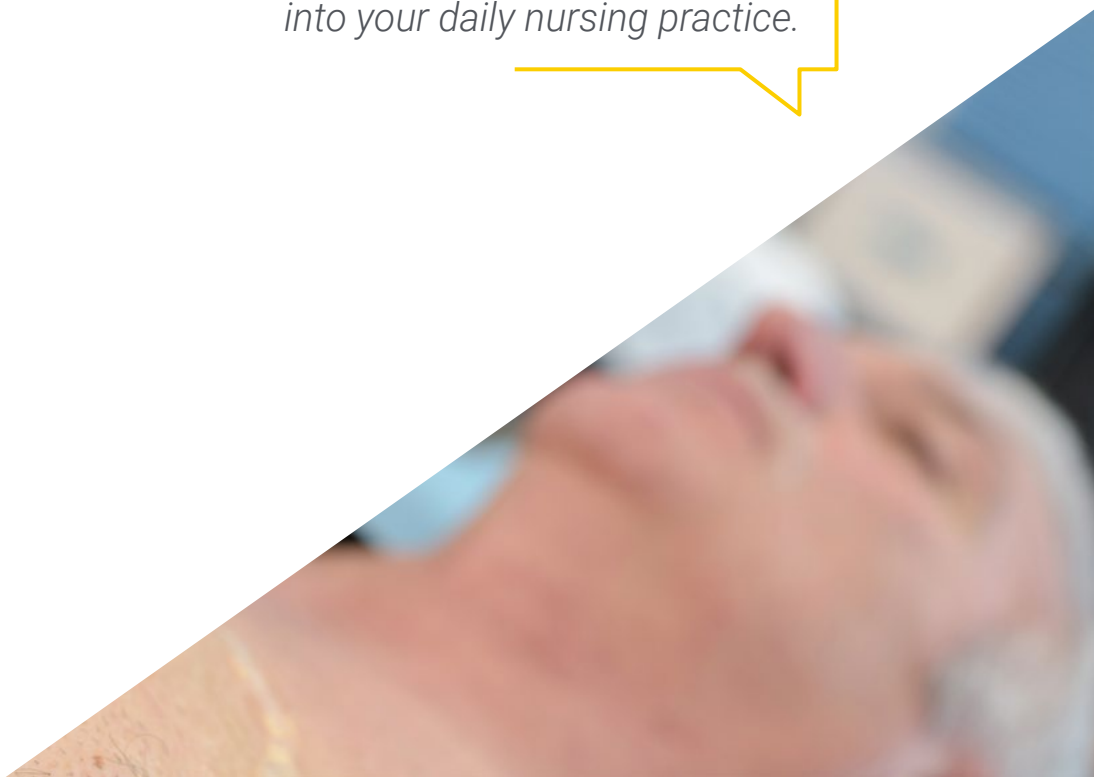
Our goal is to offer our students the most complete program on the market, so they are able to excel and broaden their knowledge and, therefore, become more efficient at their profession.

Update your knowledge of the advances in ultrasound diagnostics and incorporate them into your daily nursing practice.

The teaching staff is made up of prestigious and renowned professionals who have extensive experience in healthcare, teaching, and research in various countries, contributing their professional expertise to this Postgraduate Diploma.

The methodological design of this Postgraduate Diploma developed by a multidisciplinary team of experts in e-learning integrates the latest advances in educational technology to create numerous multimedia tools that allow professionals to resolve real situations in their daily practice. These will enable you to advance by both acquiring knowledge and developing new skills in your future professional work

The contents generated for this Postgraduate Diploma, as well as the videos, self-exams, clinical cases, and modular exams, have been thoroughly reviewed, updated, and integrated by the professors and the team of experts that make up the course working group, in order to gradually and educationally facilitate a learning process that allows for the objectives of the teaching program to be achieved.



02

Objectives

The main objective of this Postgraduate Diploma is to provide the most up-to-date and innovative scientific knowledge in this diagnostic area, which will allow students to develop the skills that will turn their daily clinical practice into a bastion of the best standards based on the available scientific evidence, in a critical, innovative, multidisciplinary and integrative sense.

Increase your visibility, excellence, and professional development by updating your knowledge with this Postgraduate Diploma"

General Objectives

- Acquire the necessary knowledge in the use of ultrasound, in order to manage the routine situations of their practical use in healthcare
- Apply the skills acquired while performing the duties of an ultrasound specialist
- Use the latest clinical developments in the day-to-day work of a Nursing professional

Make the most of the opportunity and take the step to get up to date on the latest developments in Primary Care Clinical Ultrasound for Nursing"

Specific Objectives

- Optimize ultrasound imaging through in-depth knowledge of the physical principles of ultrasound and the controls and operation of ultrasound scanners
- Master the basic and advanced procedures of Ultrasound, both at diagnostic and therapeutic level
- Determine the indications and limitations of ultrasound and its use in the most common clinical situations
- Predict the results of invasive diagnostic procedures non-invasively by using ultrasound, with the possibility of replacing them
- Guide invasive therapeutic procedures to minimize their risks
- Understand how to extend the concept of ultrasound to healthcare, research, and academic environments

03

Course Management

The program's teaching staff includes leading specialists in clinical ultrasound and other related areas, who bring their years of work experience to this training. Additionally, other recognized specialists participate in its design and preparation, which means that the program is developed in an interdisciplinary manner.

Acquire the most up-to-date knowledge in this field of work and use advanced ultrasound protocols in your day-to-day work”

Management

Dr. Fumadó Queral, Josep

- Family physician at Els Muntells Primary Care Center (Amposta, Tarragona)
- Graduate in Clinical Ultrasound and Training of Trainers, University of Montpelier-Nîmes, France
- Lecturer at the Associació Mediterrània of General Medicine
- Teacher at the Spanish School of Ultrasound of the Spanish Society of General and Family Physicians (SEMG)
- Honorary Member of the Canary Society of Ultrasound (SOCANECO) and Professor of its Annual Symposium
- Lecturer on the Master's Degree in Clinical Ultrasound for Emergencies and Critical Care, CEU Cardenal Herrera University

Dr. Pérez Morales, Luis Miguel

- Family physician at the Primary Care Center of Arucas (Gran Canaria, Canary Islands)
- Diploma in Ultrasound in Primary Care University Rovira i Virgili Catalan Institute of Health
- Expert in Thoracic Ultrasound University of Barcelona
- Expert in Abdominal and Musculoskeletal Clinical Ultrasound for Emergency and Critical Care, CEU Cardenal Herrera University
- President and Professor of the Canary Society of Ultrasound (SOCANECO) and Director of its Annual Symposium
- Lecturer on the Master's Degree in Clinical Ultrasound for Emergencies and Critical Care, CEU Cardenal Herrera University

Scientific Committee

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- Specialist in Intensive Care Medicine
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- Director of the Master's Degree in Clinical Imaging in Emergency and Critical Care, CEU Cardenal Herrera University
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Dr. Herrera Carcedo, Carmelo

- Family Physician and Head of the Ultrasound Unit, Briviesca Health Center, Burgos
- Tutor at the Family and Community Medicine Teaching Unit, Burgos
- Teacher at the Spanish School of Ultrasound of the Spanish Society of General and Family Physicians (SEMG)
- Member of the Spanish Society of Ultrasound (SEECO) and the Spanish Association of Prenatal Diagnosis (AEDP)

Dr. Jiménez Díaz, Fernando

- Specialist in Sports Medicine
- Professor in the Faculty of Sports Sciences, University of Castilla La Mancha Toledo
- Director of the International Chair of Musculoskeletal Ultrasound, Catholic University of Murcia
- Professor on the Master's Degree in Clinical Imaging in Emergency and Critical Care, CEU Cardenal Herrera University

Dr. Sánchez Sánchez, José Carlos

- Radiodiagnosis Specialist
- Director of the Integrated Diagnostic Imaging Management Area and Intrahospital Coordinator of the Breast Cancer Early Detection Program, Poniente Hospital El Ejido, Almería
- Professor on the Specialist Degree in Clinical Ultrasound for Family Physicians, University of Barcelona

Professors

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- Head of the Emergency and Intensive Care Department, San Juan de Dios Hospital Córdoba

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- Rehabilitation Specialist. Insular University Hospital Complex, Maternity and Infant. Las Palmas de Gran Canaria

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Dr. Santos Sánchez, José Ángel
- Specialist in the Radiology Department, Salamanca University Hospital Salamanca

Dr. Segura Blázquez, José María
- Family Physician Canalejas Health Center Las Palmas de Gran Canaria, Canary Islands

Dr. Wagüemert Pérez, Aurelio
- Specialist in Pulmonology, San Juan de Dios Hospital Santa Cruz de Tenerife, Canary Islands

Dr. García García, Nicasio
- Family Physician, Schamann Health Center

A unique, key, and decisive training experience to boost your professional development"

04

Structure and Content

The structure of the contents has been designed by a team of professionals from leading hospitals, who have taken into account the need to update the content that will be taught, as well as the use of quality teaching through new educational technologies.

This program will help you to detect, and intervene in diseases that can be diagnosed using Thoracic and Vascular Ultrasound"

Module 1. Ultrasound Imaging

1.1. Physical Principles
- 1.1.1. Sounds and Ultrasound
- 1.1.2. The Nature of Sound
- 1.1.3. Interaction of Sound with Matter
- 1.1.4. The 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. Ultrasound Reception
- 1.2.5. Ultrasound Image Generation

1.3. Ultrasound Modes
- 1.3.1. Modes A and M
- 1.3.2. B Mode
- 1.3.3. Doppler Modes (Color, Angio and Spectral)
- 1.3.4. Combined Modes

1.4. Ultrasound Scanners
- 1.4.1. Common Components
- 1.4.2. Classification
- 1.4.3. Transducers

1.5. Ultrasound Maps and Echonavigation
- 1.5.1. Spatial Layout
- 1.5.2. Ultrasound Maps
- 1.5.3. Transducer Movements
- 1.5.4. Practical Advice

1.6. Trends in Ultrasound
- 1.6.1. 3D/4D Ultrasound
- 1.6.2. Sonoelastography
- 1.6.3. Echopotentiation
- 1.6.4. Other Modes and Techniques

Module 2. Clinical Ultrasound of the Head and Neck

2.1. Anatomy Recap
- 2.1.1. Cranium and Face
- 2.1.2. Tubular Structures
- 2.1.3. Glandular Structures
- 2.1.4. Vascular Structures

2.2. Ocular Ultrasound
- 2.2.1. Ultrasound Anatomy of the Eye
- 2.2.2. Ocular Ultrasound Technique
- 2.2.3. Indications and Contraindications of Ocular Ultrasonography
- 2.2.4. Ultrasound Report

2.3. Ultrasound of Salivary Glands
- 2.3.1. Regional Sonoanatomy
- 2.3.2. Technical Aspects
- 2.3.3. Most Common Tumor and Non-Tumor Pathologies

2.4. Thyroid Ultrasound
- 2.4.1. Ultrasound Technique
- 2.4.2. Indications
- 2.4.3. Normal and Pathological Thyroid
- 2.4.4. Diffuse Goiter

2.5. Ultrasound Examination of Adenopathies
- 2.5.1. Reactive Lymph Nodes
- 2.5.2. Non-Specific Inflammatory Diseases
- 2.5.3. Specific Lymphadenitis (Tuberculosis)
- 2.5.4. Primary Lymph Node Diseases (Sarcoidosis, Hodgkin's Lymphoma, Non-Hodgkin's Lymphoma)
- 2.5.5. Lymph Node Metastases

2.6. Ultrasound of the Supra-Aortic Trunks
- 2.6.1. Sonoanatomy
- 2.6.2. Scanning Protocol
- 2.6.3. Extracranial Carotid Pathology
- 2.6.4. Vertebral Pathology and Subclavian Artery Steal Syndrome

Module 3. Thoracic Ultrasound

3.1. Thoracic Ultrasound Fundamentals
- 3.1.1. Anatomy Recap
- 3.1.2. Echoes and Artifacts in the Thorax
- 3.1.3. Technical Requirements
- 3.1.4. Exploration Systematics

3.2. Ultrasound of the Chest Wall, Mediastinum, and Diaphragm
- 3.2.1. Soft Tissues
- 3.2.2. Thoracic Cage
- 3.2.3. Mediastinum
- 3.2.4. Diaphragm

3.3. Pleural Ultrasound
- 3.3.1. Normal Pleura
- 3.3.2. Pleural Effusion
- 3.3.3. Pneumothorax
- 3.3.4. Solid Pleural Pathology

3.4. Pulmonary Ultrasound
- 3.4.1. Pneumonia and Atelectasis
- 3.4.2. Pulmonary Neoplasms
- 3.4.3. Diffuse Lung Disease
- 3.4.4. Pulmonary Infarction

3.5. Cardiac Ultrasound and Basic Hemodynamics
- 3.5.1. Normal Cardiac Sonoanatomy and Hemodynamics
- 3.5.2. Examination Technique
- 3.5.3. Structural Alterations
- 3.5.4. Hemodynamic Alterations

3.6. Trends in Thoracic Ultrasound
- 3.6.1. Pulmonary Sonoelastography
- 3.6.2. 3D/4D Thoracic Ultrasound
- 3.6.3. Other Modes and Techniques

Module 4. Clinical Vascular Ultrasound

4.1. Vascular Ultrasound
- 4.1.1. Description and Applications
- 4.1.2. Technical Requirements
- 4.1.3. Procedure
- 4.1.4. Interpretation of Results. - Risks and Benefits
- 4.1.5. Limitations

4.2. Doppler
- 4.2.1. Fundamentals
- 4.2.2. Applications
- 4.2.3. Types of Echo-Doppler
- 4.2.4. Color Doppler
- 4.2.5. Power Doppler
- 4.2.6. Dynamic Doppler

4.3. Normal Ultrasound of the Venous System
- 4.3.1. Anatomy Recap: Venous System of the Upper Extremities
- 4.3.2. Anatomy Recap: Venous System of the Lower Extremities
- 4.3.3. Normal Physiology
- 4.3.4. Regions of Interest
- 4.3.5. Functional Tests
- 4.3.6. Report. Vocabulary

4.4. Upper Extremity Chronic Venous Disease
- 4.4.1. Definition
- 4.4.2. CEAP Classification.
- 4.4.3. Morphological Criteria
- 4.4.4. Examination Technique
- 4.4.5. Diagnostic Maneuvers
- 4.4.6. Type of Report

4.5. Acute/Subacute Vascular Thrombosis of the Upper Extremities
- 4.5.1. Anatomy Recap
- 4.5.2. Manifestations of Vascular Thrombosis of the Upper Extremities
- 4.5.3. Ultrasound Characteristics
- 4.5.4. Examination Technique
- 4.5.5. Diagnostic Maneuvers
- 47.5.6. Technical Limitations

4.6. Acute/Subacute Vascular Thrombosis of the Lower Extremities
- 4.6.1. Description
- 4.6.2. Manifestations of Vascular Thrombosis of the Lower Extremities
- 4.6.3. Ultrasound Characteristics
- 4.6.4. Examination Technique
- 4.6.5. Differential Diagnosis
- 4.6.6. Vascular Report

An impressive teaching staff, made up of professionals from different areas of expertise, will be your teachers during your training: a unique opportunity not to be missed"

05

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**

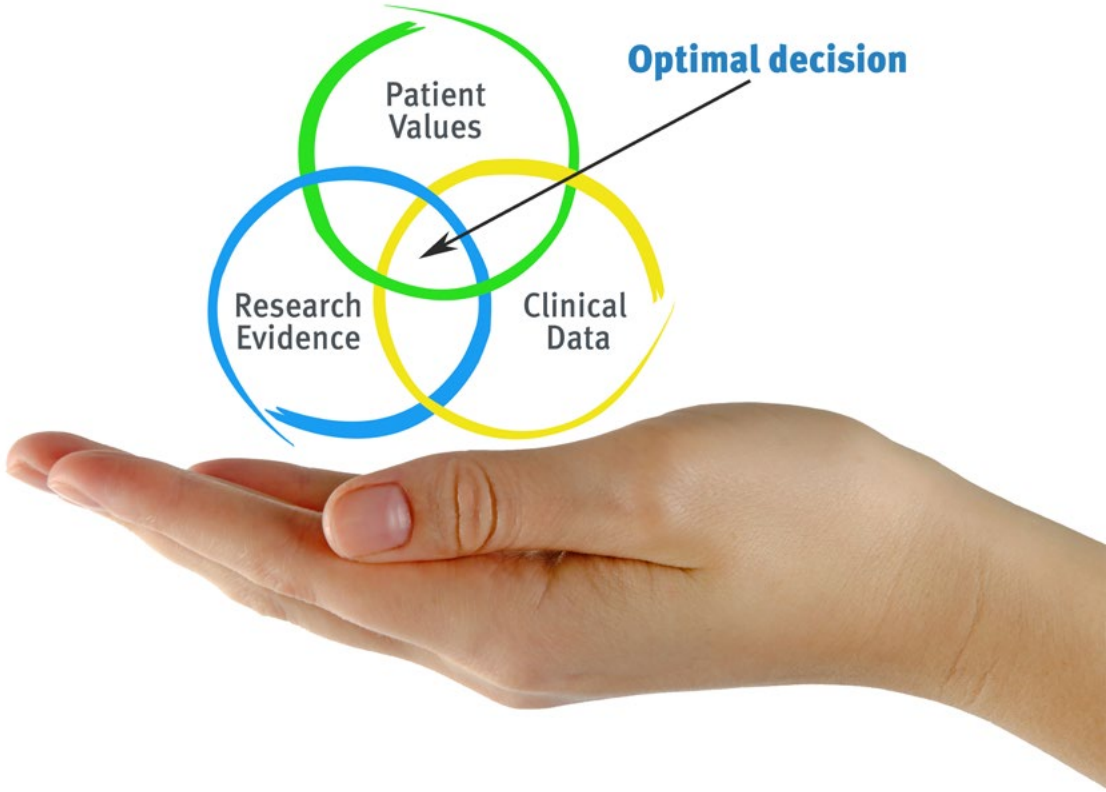
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

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.

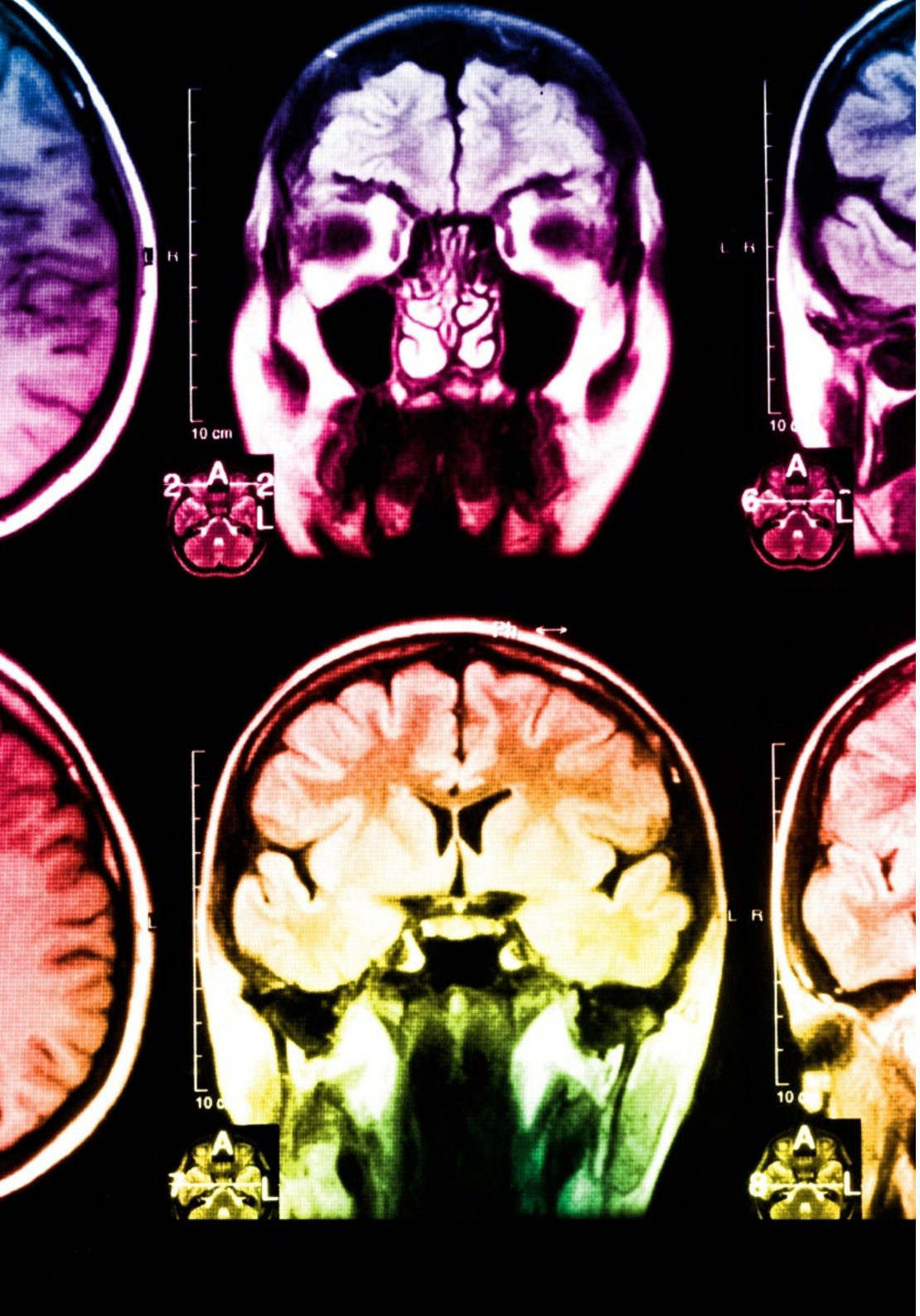
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

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.

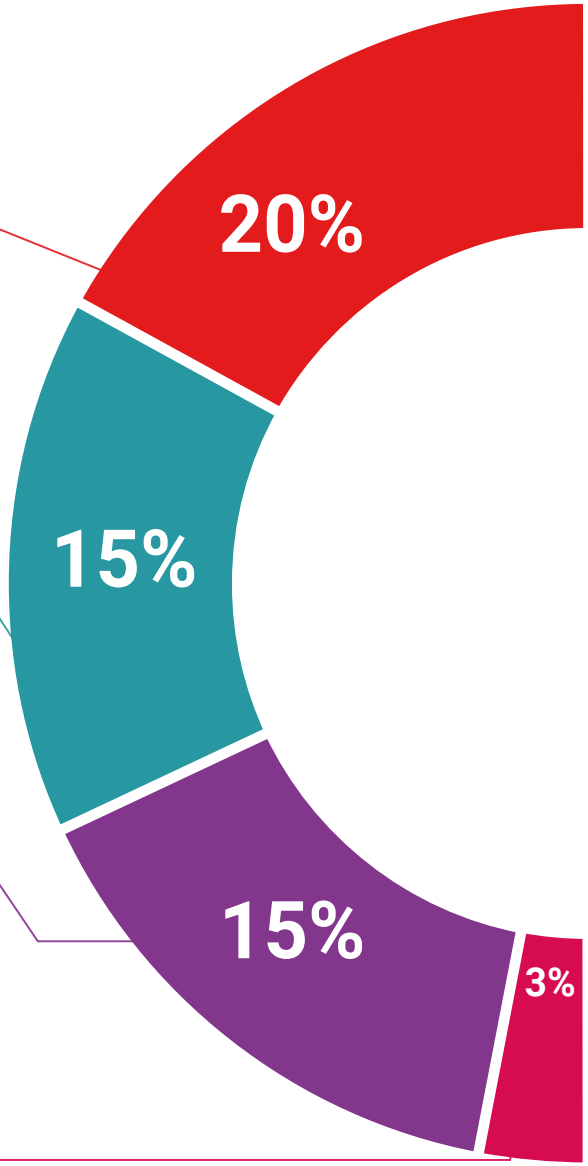
Interactive Summaries

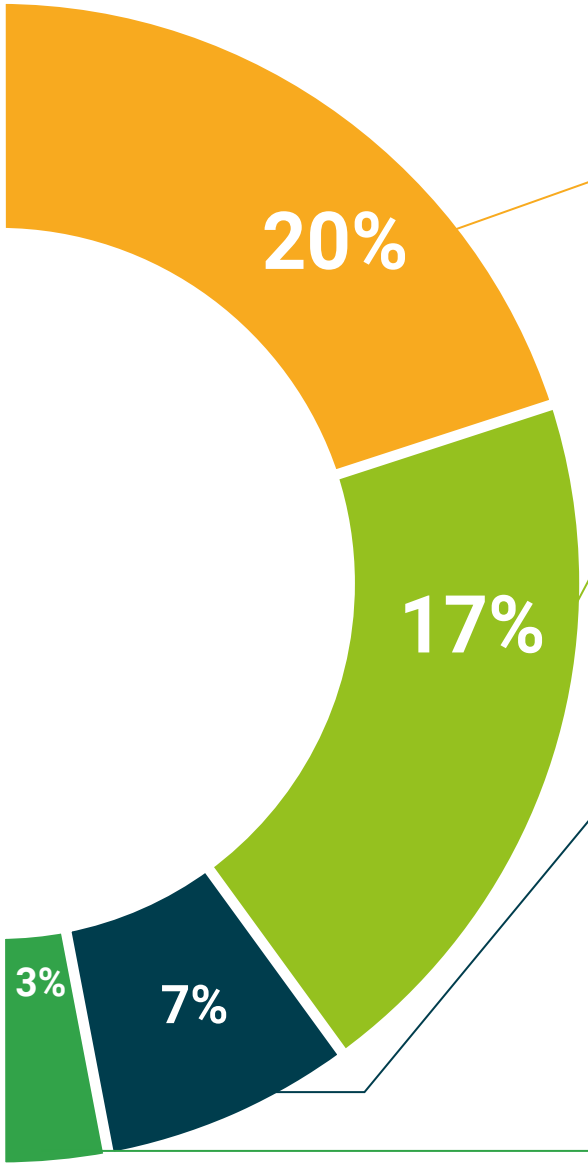
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

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

This **Certificate Diploma in Thoracic and Vascular 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 Diploma** issued by **TECH Technological University** via tracked delivery*.

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

Title: **Postgraduate Diploma in Thoracic and Vascular Ultrasound for Nursing**

Official Nº of hours: **450 h.**


tech technological university

Awards the following

CERTIFICATE

to

Mr./Ms. _____, with identification number _____.

For having passed and accredited the following program

POSTGRADUATE DIPLOMA

in

Name of Program

This is a qualification awarded by this University, equivalent to 500 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro

Dean

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 EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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