

# Advanced Master's Degree Clinical Ultrasound for Nursing

Accreditation/Membership



**tech** global  
university



## Advanced Master's Degree Clinical Ultrasound for Nursing

- » Modality: online
- » Duration: 2 years
- » Certificate: TECH Global University
- » Accreditation: 120 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/nursing/advanced-master-degree/advanced-master-degree-clinical-ultrasound-nursing](http://www.techtute.com/us/nursing/advanced-master-degree/advanced-master-degree-clinical-ultrasound-nursing)

# Index

01

Introduction to the Program

---

p. 4

02

Why Study at TECH?

---

p. 8

03

Syllabus

---

p. 12

04

Teaching Objectives

---

p. 26

05

Career Opportunities

---

p. 32

06

Study Methodology

---

p. 36

07

Teaching Staff

---

p. 46

08

Certificate

---

p. 58

01

# Introduction to the Program

Clinical Ultrasound has emerged as an essential diagnostic tool in the field of nursing, transforming the way patient care is provided. According to the American Institute of Ultrasound in Medicine, the integration of ultrasound in this field not only improves diagnostic accuracy but also enhances the efficiency of procedures performed by healthcare professionals. In a world where healthcare is becoming increasingly complex and specialized, TECH has designed this exclusive postgraduate program to address the most significant advancements in this field. Through a 100% online methodology, professionals will become leaders in the use of this innovative and transformative diagnostic technology.





“

*A comprehensive and 100% online program, exclusive to TECH, with an international perspective backed by our membership in the National League for Nursing"*

The use of Clinical Ultrasound for Nursing not only allows for quicker and more effective assessments in critical situations but also facilitates informed decision-making, which is essential in high-pressure environments. In an increasingly demanding healthcare setting, the ability to use ultrasound not only optimizes practice but also empowers nurses to take an active role in the comprehensive care of patients.

In this context, TECH presents the Advanced Master's Degree in Clinical Ultrasound for Nursing, which will provide the necessary skills to integrate this technology into daily practice.

Through a rigorous approach and an up-to-date syllabus topics such as abdominal ultrasound, cardiac assessment, and ultrasound in emergencies will be addressed, providing in-depth knowledge of the various clinical applications of this technique. Additionally, the program will delve into abdominal, cardiac, and pulmonary ultrasound. In this way, the postgraduate course will not only prepare graduates to master Clinical Ultrasound, but it will also open new doors in their professional careers.

Furthermore, this university qualification will be taught entirely online, allowing students to adapt their training to their schedules and daily responsibilities. The Relearning methodology implemented will facilitate the assimilation of key concepts through the strategic repetition of content, ensuring that each student can effectively consolidate their knowledge. In this way, students will have access to all materials 24/7 from any device with an internet connection.

As a member of the **National League for Nursing (NLN)**, TECH offers students access to assessment tools, digital libraries, webinars, and conferences focused on nursing educational excellence. This membership promotes faculty development, engagement with leading experts in the field, and the opportunity to join high-impact academic and clinical networks.

This **Advanced Master's Degree in Clinical Ultrasound for Nursing** contains the most complete and up to date university program on the market. Its most notable features are:

- ♦ The development of practical cases presented by experts in Nursing
- ♦ 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
- ♦ Practical exercises where self-assessment can be used to improve learning
- ♦ Special emphasis on innovative methodologies in Clinical Ultrasound for Nursing
- ♦ 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



*Thanks to the Relearning methodology, you will effectively and permanently absorb the concepts of Clinical Ultrasound. What are you waiting for to enroll?" Enroll now and be part of the new era in Nursing"*

“

*This postgraduate program will offer you a comprehensive syllabus covering the physical principles of ultrasound and its application in emergencies and critical care. Join this program now and boost your career!”*

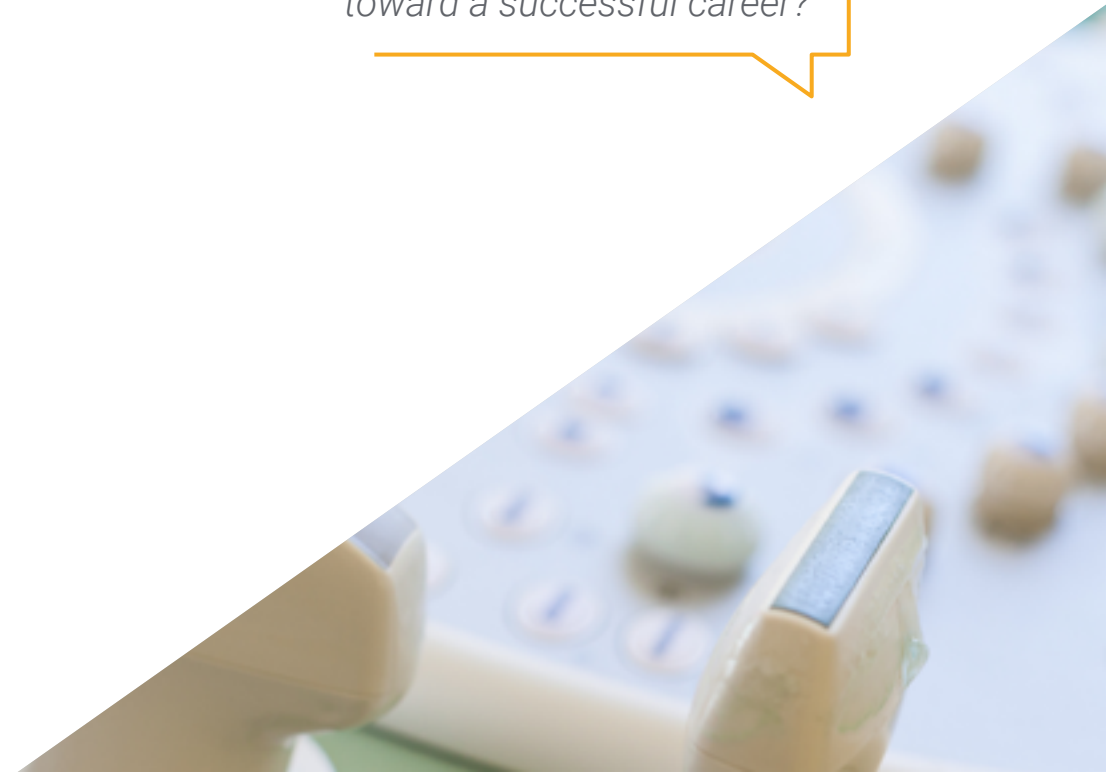
The teaching staff includes nursing professionals who bring their experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive learning experience designed to prepare for real-life situations.

This program is designed around Problem-Based Learning, whereby the student 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.

*You will train with instructors who have extensive experience in the field and acquire skills that will set you apart in the job market. Enroll today and become an expert in Clinical Ultrasound!*

*Through thorough and efficient training, you will gain the necessary skills to perform ultrasounds with precision. What are you waiting for to take the next step toward a successful career?*



02

# Why Study at TECH?

TECH is the world's largest online university. With an impressive catalog of more than 14,000 university programs, available in 11 languages, it is positioned as a leader in employability, with a 99% job placement rate. In addition, it has a huge faculty of more than 6,000 professors of the highest international prestige.





“

*Study at the largest online university in the world and ensure your professional success. The future begins at TECH”*

### The world's best online university, according to FORBES

The prestigious Forbes magazine, specialized in business and finance, has highlighted TECH as "the best online university in the world" This is what they have recently stated in an article in their digital edition in which they echo the success story of this institution, "thanks to the academic offer it provides, the selection of its teaching staff, and an innovative learning method oriented to form the professionals of the future".

### The best top international faculty

TECH's faculty is made up of more than 6,000 professors of the highest international prestige. Professors, researchers and top executives of multinational companies, including Isaiah Covington, performance coach of the Boston Celtics; Magda Romanska, principal investigator at Harvard MetaLAB; Ignacio Wistumba, chairman of the department of translational molecular pathology at MD Anderson Cancer Center; and D.W. Pine, creative director of TIME magazine, among others.

### The world's largest online university

TECH is the world's largest online university. We are the largest educational institution, with the best and widest digital educational catalog, one hundred percent online and covering most areas of knowledge. We offer the largest selection of our own degrees and accredited online undergraduate and postgraduate degrees. In total, more than 14,000 university programs, in ten different languages, making us the largest educational institution in the world.



### The most complete syllabuses on the university scene

TECH offers the most complete syllabuses on the university scene, with programs that cover fundamental concepts and, at the same time, the main scientific advances in their specific scientific areas. In addition, these programs are continuously updated to guarantee students the academic vanguard and the most demanded professional skills. and the most in-demand professional competencies. In this way, the university's qualifications provide its graduates with a significant advantage to propel their careers to success.

### A unique learning method

TECH is the first university to use Relearning in all its programs. This is the best online learning methodology, accredited with international teaching quality certifications, provided by prestigious educational agencies. In addition, this innovative academic model is complemented by the "Case Method", thereby configuring a unique online teaching strategy. Innovative teaching resources are also implemented, including detailed videos, infographics and interactive summaries.



#### The official online university of the NBA

TECH is the official online university of the NBA. Thanks to our agreement with the biggest league in basketball, we offer our students exclusive university programs, as well as a wide variety of educational resources focused on the business of the league and other areas of the sports industry. Each program is made up of a uniquely designed syllabus and features exceptional guest hosts: professionals with a distinguished sports background who will offer their expertise on the most relevant topics.

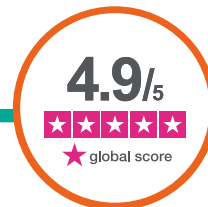
#### Leaders in employability

TECH has become the leading university in employability. Ninety-nine percent of its students obtain jobs in the academic field they have studied within one year of completing any of the university's programs. A similar number achieve immediate career enhancement. All this thanks to a study methodology that bases its effectiveness on the acquisition of practical skills, which are absolutely necessary for professional development.



#### Google Premier Partner

The American technology giant has awarded TECH the Google Premier Partner badge. This award, which is only available to 3% of the world's companies, highlights the efficient, flexible and tailored experience that this university provides to students. The recognition not only accredits the maximum rigor, performance and investment in TECH's digital infrastructures, but also places this university as one of the world's leading technology companies.



#### The top-rated university by its students

Students have positioned TECH as the world's top-rated university on the main review websites, with a highest rating of 4.9 out of 5, obtained from more than 1,000 reviews. These results consolidate TECH as the benchmark university institution at an international level, reflecting the excellence and positive impact of its educational model.



# 03 Syllabus

This university program will cover both the theoretical foundations and the practical applications of ultrasound in various clinical areas. The curriculum will provide essential topics such as abdominal, cardiac, and pulmonary ultrasound, as well as its use in emergency situations and image-guided procedures. Additionally, the program will include specific modules that encourage the development of critical skills for image interpretation and clinical decision-making. Thanks to this, nurses will not only gain technical knowledge but also become leaders in patient care.



“

*With TECH's flexible and accessible approach, you will become a highly skilled expert who will make a difference in healthcare. Join this transformative experience today!”*

## Module 1. Ultrasound Imaging

- 1.1. Physical Principles
  - 1.1.1. Sound and Ultrasound
  - 1.1.2. The Nature of Sound
  - 1.1.3. Interaction of Sound with Matter
  - 1.1.4. Concept of Ultrasound Imaging
  - 1.1.5. Ultrasound Safety
- 1.2. Ultrasound Sequence
  - 1.2.1. Ultrasound Emission
  - 1.2.2. Interaction with Tissues
  - 1.2.3. Echo Formation
  - 1.2.4. Ultrasound Reception
  - 1.2.5. Generation of the Ultrasound Image
- 1.3. Ultrasound Modes
  - 1.3.1. A-Mode and M-Mode
  - 1.3.2. B-Mode
  - 1.3.3. Doppler Modes (Color, Angio, and Spectral)
  - 1.3.4. Combined Modes
- 1.4. Ultrasound Devices
  - 1.4.1. Common Components
  - 1.4.2. Classification
  - 1.4.3. Transducers
- 1.5. Ultrasound Planes and Echonavigation
  - 1.5.1. Spatial Arrangement
  - 1.5.2. Ultrasound Planes
  - 1.5.3. Transducer Movements
  - 1.5.4. Practical Tips
- 1.6. Trends in Ultrasound
  - 1.6.1. 3D/4D Ultrasound
  - 1.6.2. Sonoelastography
  - 1.6.3. Echopotential
  - 1.6.4. Other Modalities and Techniques

## Module 2. Clinical Ultrasound of the Head and Neck

- 2.1. Anatomical Review
  - 2.1.1. Skull 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. Techniques for Performing Ocular Ultrasound
  - 2.2.3. Indications and Contraindications for Ocular Ultrasound
  - 2.2.4. Ultrasound Report
- 2.3. Salivary Gland Ultrasound
  - 2.3.1. Regional Sonoanatomy
  - 2.3.2. Technical Aspects
  - 2.3.3. Most Common Tumoral and Non-Tumoral Pathology
- 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 Study of Lymphadenopathies
  - 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. Exploration Protocol
  - 2.6.3. Extracranial Carotid Pathology
  - 2.6.4. Vertebral Pathology and Subclavian Steal Syndrome

**Module 3. Clinical Ultrasound of the Digestive Tract and Large Vessels**

- 3.1. Liver Ultrasound
  - 3.1.1. Anatomy
  - 3.1.2. Liquid Focal Lesions
  - 3.1.3. Solid Focal Lesions
  - 3.1.4. Diffuse Liver Disease
  - 3.1.5. Chronic Liver Diseases
- 3.2. Gallbladder and Biliary Tract Ultrasound
  - 3.2.1. Anatomy
  - 3.2.2. Cholelithiasis and Biliary Sludge
  - 3.2.3. Gallbladder Polyps
  - 3.2.4. Cholecystitis
  - 3.2.5. Biliary Tract Dilation
  - 3.2.6. Biliary Tract Malformations
- 3.3. Pancreatic Ultrasound
  - 3.3.1. Anatomy
  - 3.3.2. Acute Pancreatitis
  - 3.3.3. Chronic Pancreatitis
- 3.4. Ultrasound of the Large Vessels
  - 3.4.1. Abdominal Aorta Pathology
  - 3.4.2. Inferior Vena Cava Pathology
  - 3.4.3. Pathology of the Celiac Trunk, Hepatic Artery, and Splenic Artery
  - 3.4.4. Aortomesenteric Pinch Syndrome
- 3.5. Spleen and Retroperitoneal Ultrasound
  - 3.5.1. Spleen Anatomy
  - 3.5.2. Splenic Focal Lesions
  - 3.5.3. Study of Splenomegaly
  - 3.5.4. Adrenal Gland Anatomy
  - 3.5.5. Adrenal Pathology
  - 3.5.6. Retroperitoneal Lesions
- 3.6. The Digestive Tract
  - 3.6.1. Ultrasound Examination of the Gastric Cavity
  - 3.6.2. Ultrasound Examination of the Small Intestine
  - 3.6.3. Ultrasound Examination of the Colon

**Module 4. Genitourinary Clinical Ultrasound**

- 4.1. Kidneys and Urinary Tract
  - 4.1.1. Anatomical Review
  - 4.1.2. Structural Alterations
  - 4.1.3. Hydronephrosis. Ureteral Dilatation
  - 4.1.4. Renal Cysts, Kidney Stones, and Tumors
  - 4.1.5. Renal Insufficiency
- 4.2. Urinary Bladder
  - 4.2.1. Anatomical Review
  - 4.2.2. Ultrasound Characteristics
  - 4.2.3. Benign Bladder Pathology
  - 4.2.4. Malignant Bladder Pathology
- 4.3. Prostate and Seminal Vesicles
  - 4.3.1. Anatomical Review
  - 4.3.2. Ultrasound Characteristics
  - 4.3.3. Benign Prostatic Pathology
  - 4.3.4. Malignant Prostatic Pathology
  - 4.3.5. Benign Seminal Pathology
  - 4.3.6. Malignant Seminal Pathology
- 4.4. Scrotum
  - 4.4.1. Anatomical Review
  - 4.4.2. Ultrasound Characteristics
  - 4.4.3. Benign Scrotal Pathology
  - 4.4.4. Malignant Scrotal Pathology
- 4.5. The Uterus
  - 4.5.1. Anatomical Review
  - 4.5.2. Ultrasound Characteristics
  - 4.5.3. Benign Uterine Pathology
  - 4.5.4. Malignant Uterine Pathology
- 4.6. Ovaries
  - 4.6.1. Anatomical Review
  - 4.6.2. Ultrasound Characteristics of the Ovaries
  - 4.6.3. Benign Ovarian Pathology
  - 4.6.4. Malignant Ovarian Pathology

## Module 5. Clinical Musculoskeletal Ultrasound

- 5.1. Anatomical Review
  - 5.1.1. Shoulder Anatomy
  - 5.1.2. Elbow Anatomy
  - 5.1.3. Wrist and Hand Anatomy
  - 5.1.4. Hip and Thigh Anatomy
  - 5.1.5. Knee Anatomy
  - 5.1.6. Ankle, Foot, and Leg Anatomy
- 5.2. Technical Requirements
  - 5.2.1. Introduction
  - 5.2.2. Musculoskeletal Ultrasound Equipment
  - 5.2.3. Ultrasound Imaging Methodology
  - 5.2.4. Validation, Reliability, and Standardization
  - 5.2.5. Ultrasound-Guided Procedures
- 5.3. Examination Technique
  - 5.3.1. Basic Concepts in Ultrasound
  - 5.3.2. Guidelines for Proper Examination
  - 5.3.3. Ultrasound Examination Technique of the Shoulder
  - 5.3.4. Ultrasound Examination Technique of the Elbow
  - 5.3.5. Ultrasound Examination Technique of the Wrist and Hand
  - 5.3.6. Ultrasound Examination Technique of the Hip
  - 5.3.7. Ultrasound Examination Technique of the Thigh
  - 5.3.8. Ultrasound Examination Technique of the Knee
  - 5.3.9. Ultrasound Examination Technique of the Leg and Ankle
- 5.4. Musculoskeletal Sonoanatomy: I. Upper Limbs
  - 5.4.1. Introduction
  - 5.4.2. Ultrasound Anatomy of the Shoulder
  - 5.4.3. Ultrasound Anatomy of the Elbow
  - 5.4.4. Ultrasound Anatomy of the Wrist and Hand
- 5.5. Musculoskeletal Sonoanatomy: II. Lower Limbs
  - 5.5.1. Introduction
  - 5.5.2. Ultrasound Anatomy of the Hip
  - 5.5.3. Ultrasound Anatomy of the Thigh
  - 5.5.4. Ultrasound Anatomy of the Knee
  - 5.5.5. Ultrasound Anatomy of the Leg and Ankle

## 5.6. Ultrasound in the Most Common Acute Musculoskeletal Injuries

- 5.6.1. Introduction
- 5.6.2. Muscle Injuries
- 5.6.3. Tendon Injuries
- 5.6.4. Ligament Injuries
- 5.6.5. Subcutaneous Tissue Injuries
- 5.6.6. Bone and Joint Injuries
- 5.6.7. Peripheral Nerve Injuries

## Module 6. Clinical Vascular Ultrasound in Primary Care

- 6.1. Vascular Ultrasound
  - 6.1.1. Description and Applications
  - 6.1.2. Technical Requirements
  - 6.1.3. Procedure
  - 6.1.4. Interpretation of Results. Risks and Benefits
  - 6.1.5. Limitations
- 6.2. Doppler Ultrasound
  - 6.2.1. Fundamentals
  - 6.2.2. Applications
  - 6.2.3. Types of Doppler Ultrasound
  - 6.2.4. Color Doppler
  - 6.2.5. Power Doppler
  - 6.2.6. Dynamic Doppler
- 6.3. Normal Ultrasound of the Venous System
  - 6.3.1. Anatomical Review: Venous System of the Upper Limbs
  - 6.3.2. Anatomical Review: Venous System of the Lower Limbs
  - 6.3.3. Normal Physiology
  - 6.3.4. Regions of Interest
  - 6.3.5. Functional Tests
  - 6.3.6. Report. Vocabulary
- 6.4. Chronic Venous Disease of the Lower Limbs
  - 6.4.1. Definition
  - 6.4.2. CEAP Classification
  - 6.4.3. Morphological Criteria
  - 6.4.4. Examination Technique
  - 6.4.5. Diagnostic Manoeuvres
  - 6.4.6. Sample Report





- 6.5. Acute/Subacute Venous Thrombosis of the Upper Limbs
  - 6.5.1. Anatomical Review
  - 6.5.2. Manifestations of Upper Limb Venous Thrombosis
  - 6.5.3. Ultrasound Characteristics
  - 6.5.4. Examination Technique
  - 6.5.5. Diagnostic Manoeuvres
  - 6.5.6. Technical Limitations
- 6.6. Acute/Subacute Venous Thrombosis of the Lower Limbs
  - 6.6.1. Description
  - 6.6.2. Manifestations of Lower Limb Venous Thrombosis
  - 6.6.3. Ultrasound Characteristics
  - 6.6.4. Examination Technique
  - 6.6.5. Differential Diagnosis
  - 6.6.6. Vascular Report

## Module 7. Clinical Ultrasound in Urgent Care and Emergencies

- 7.1. Ultrasound in Respiratory Failure
  - 7.1.1. Spontaneous Pneumothorax
  - 7.1.2. Bronchospasm
  - 7.1.3. Pneumonia
  - 7.1.4. Pleural Effusion
  - 7.1.5. Heart Failure
- 7.2. Ultrasound in Shock and Cardiac Arrest
  - 7.2.1. Hypovolemic Shock
  - 7.2.2. Obstructive Shock
  - 7.2.3. Cardiogenic Shock
  - 7.2.4. Distributive Shock
  - 7.2.5. Cardiac Arrest
- 7.3. Ultrasound in Polytrauma: Eco-FAST
  - 7.3.1. Pericardial Effusion
  - 7.3.2. Hemothorax and Pneumothorax
  - 7.3.3. Hepatorenal or Perihepatic Effusion
  - 7.3.4. Splenorenal or Perisplenic Effusion
  - 7.3.5. Perivesical Effusion
  - 7.3.6. Post-Traumatic Aortic Dissection
  - 7.3.7. Musculoskeletal Injuries

- 7.4. Genitourinary Emergencies
  - 7.4.1. Obstructive Uropathy
  - 7.4.2. Uterine Emergencies
  - 7.4.3. Ovarian Emergencies
  - 7.4.4. Bladder Emergencies
  - 7.4.5. Prostatic Emergencies
  - 7.4.6. Scrotal Emergencies
- 7.5. Acute Abdomen
  - 7.5.1. Cholecystitis
  - 7.5.2. Pancreatitis
  - 7.5.3. Mesenteric Ischemia
  - 7.5.4. Appendicitis
  - 7.5.5. Hollow Organ Perforation
- 7.6. Ultrasound in Sepsis
  - 7.6.1. Hemodynamic Diagnosis
  - 7.6.2. Source Detection
  - 7.6.3. Fluid Management

## Module 8. Ultrasound-Guided Procedures in Primary Care

- 8.1. Ultrasound-Guided Fine Needle Aspiration (FNA)
  - 8.1.1. Indications/Contraindications
  - 8.1.2. Material
  - 8.1.3. Procedure
  - 8.1.4. Results
  - 8.1.5. Complications
  - 8.1.6. Quality Control
- 8.2. Ultrasound-Guided Percutaneous Biopsy
  - 8.2.1. Biopsy Materials (Types of Biopsy Needles)
  - 8.2.2. Procedure
  - 8.2.3. Complications
  - 8.2.4. Care
  - 8.2.5. Quality Control





- 8.3. Drainage of Abscesses and Fluid Collections
  - 8.3.1. Indications and Contraindications
  - 8.3.2. Requirements and Materials
  - 8.3.3. Technique and Access Route: Direct Puncture (Trocár) vs Step-by-Step (Seldinger)
  - 8.3.4. Catheter Management and Patient Care
  - 8.3.5. Side Effects and Complications
  - 8.3.6. Quality Control
- 8.4. Ultrasound-Guided Thoracentesis, Pericardiocentesis, and Paracentesis
  - 8.4.1. Indications and Advantages of the Anatomical Reference Technique
  - 8.4.2. Basic Aspects: Ultrasound Specifications and Ultrasound Anatomy
  - 8.4.3. Ultrasound Specifications and Pericardial Drainage Technique
  - 8.4.4. Ultrasound Specifications and Thoracic Drainage Technique
  - 8.4.5. Ultrasound Specifications and Abdominal Drainage Technique
  - 8.4.6. Common Problems, Complications, and Practical Tips
- 8.5. Ultrasound-Guided Vascular Access
  - 8.5.1. Indications and Advantages of the Anatomical Reference Technique
  - 8.5.2. Current Evidence on Ultrasound-Guided Vascular Access
  - 8.5.3. Basic Aspects: Ultrasound Specifications and Ultrasound Anatomy
  - 8.5.4. Ultrasound-Guided Central Venous Cannulation Technique
  - 8.5.5. Ultrasound-Guided Peripheral Catheter and Peripherally Inserted Central Catheter (PICC) Technique
  - 8.5.6. Ultrasound-Guided Arterial Cannulation Technique
- 8.6. Ultrasound-Guided Infiltrations and Chronic Pain Treatment
  - 8.6.1. Infiltrations and Pain
  - 8.6.2. Large Joints: Intra-Articular and Myotendinous
  - 8.6.3. Small Joints: Intra-Articular and Myotendinous
  - 8.6.4. Spinal Column

## Module 9. Other Uses of Clinical Ultrasound

- 9.1. Radial Breast Ultrasound
  - 9.1.1. Anatomical Review
  - 9.1.2. Technical Requirements
  - 9.1.3. Ultrasound Slices
  - 9.1.4. Ultrasound Characteristics. Breast Pathology
  - 9.1.5. Breast Elastography
- 9.2. Dermatological Ultrasound
  - 9.2.1. Echoanatomy of the Skin and Appendages
  - 9.2.2. Ultrasound of Skin Tumors
  - 9.2.3. Ultrasound of Inflammatory Skin Diseases
  - 9.2.4. Ultrasound in Dermoaesthetics and its Complications
- 9.3. Introduction to Cerebral Clinical Ultrasound
  - 9.3.1. Brain Anatomy and of Ultrasound Interest
  - 9.3.2. Ultrasound Techniques and Procedures
  - 9.3.3. Structural Alterations
  - 9.3.4. Functional Alterations
  - 9.3.5. Ultrasound in Intracranial Hypertension
- 9.4. Ultrasound in Diabetes
  - 9.4.1. Atherosclerosis of the Aorta/Carotid in Diabetics
  - 9.4.2. Parenchymal Echogenicity in Diabetic Patients
  - 9.4.3. Biliary Lithiasis in Diabetic Patients
  - 9.4.4. Neurogenic Bladder in Diabetic Patients
  - 9.4.5. Cardiomyopathy in Diabetic Patients
- 9.5. Ultrasound in the Study of Frailty in the Elderly
  - 9.5.1. Frail Elderly
  - 9.5.2. ABCDE Ultrasound in the Frail Elderly Patient
  - 9.5.3. Ultrasound Examination of Sarcopenia
  - 9.5.4. Ultrasound Examination of Cognitive Deterioration
- 9.6. Ultrasound Report
  - 9.6.1. Ultrasound Note
  - 9.6.2. Ultrasound Derivation
  - 9.6.3. Ultrasound Report in PC

## Module 10. Clinical Cardiac Ultrasound

- 10.1. Cardiac Anatomy
  - 10.1.1. Basic Three-Dimensional Anatomy
  - 10.1.2. Basic Cardiac Physiology
- 10.2. Technical Requirements
  - 10.2.1. Feeding Tubes
  - 10.2.2. Characteristics of the Equipment used in a Cardiac Ultrasound
- 10.3. Pericardial Windows and Cardiac Ultrasound
  - 10.3.1. Windows and Planes Applied in Emergencies and Intensive Care Situations
  - 10.3.2. Basic Doppler (Color, Pulsating, Continuous and Tissue Doppler)
- 10.4. Structural Abnormalities
  - 10.4.1. Basic Measures in Cardiac Ultrasound
  - 10.4.2. Thrombi
  - 10.4.3. Suspected Endocarditis
  - 10.4.4. Valvulopathies
  - 10.4.5. Pericardium
  - 10.4.6. How to Report an Ultrasound in Emergencies and Critical Care
- 10.5. Structural Alterations I
  - 10.5.1. Left Ventricle
  - 10.5.2. Right Ventricle
- 10.6. Hemodynamic Ultrasound
  - 10.6.1. Left Ventricular Hemodynamics
  - 10.6.2. Right Ventricular Hemodynamics
  - 10.6.3. Preload Dynamic Tests
- 10.7. Transesophageal Echocardiogram
  - 10.7.1. Technique
  - 10.7.2. Indications in Emergencies and Intensive Care Cases
  - 10.7.3. Ultrasound-Guided Study of Cardioembolism

**Module 11. Clinical Thoracic Ultrasound**

- 11.1. Fundamentals of Thoracic Ultrasound and Anatomical Review
  - 11.1.1. Study of the Normal Thorax
  - 11.1.2. Pulmonary Ultrasound Semiology
  - 11.1.3. Pleural Ultrasound Semiology
- 11.2. Technical Requirements. Examination Technique
  - 11.2.1. Types of Probes Used
  - 11.2.2. Ultrasound with Contrast in the Thorax
- 11.3. Ultrasound of the Thoracic Wall and the Mediastinum
  - 11.3.1. Examination of Pulmonary Pathology
  - 11.3.2. Examination of Pleural Pathology
  - 11.3.3. Examination of Mediastinal and Thoracic Wall Pathology
- 11.4. Ultrasound of the Pleura
  - 11.4.1. Pleural Effusion and Solid Pleural Pathology
  - 11.4.2. Pneumothorax
  - 11.4.3. Pleural Interventionism
  - 11.4.4. Adenopathies and Mediastinal Masses
  - 11.4.5. Adenopathies of the Thoracic Wall
  - 11.4.6. Osteomuscular Pathology of the Thoracic Wall
- 11.5. Pulmonary Ultrasound Scan
  - 11.5.1. Pneumonia and Atelectasis
  - 11.5.2. Pulmonary Neoplasms
  - 11.5.3. Diffuse Pulmonary Pathology
  - 11.5.4. Pulmonary Infarction
- 11.6. Diaphragmatic Ultrasound
  - 11.6.1. Ultrasound Approach to the Diaphragmatic Pathology
  - 11.6.2. Usefulness of Ultrasound in the Study of the Diaphragm

**Module 12. Clinical Cerebrovascular Ultrasound for Emergencies and Primary Care**

- 12.1. Anatomical Review
  - 12.1.1. Venous Vascular Anatomy of the Upper Limbs
  - 12.1.2. Arterial Vascular Anatomy of the Upper Limbs
  - 12.1.3. Venous Vascular Anatomy of the Lower Limbs
  - 12.1.4. Arterial Vascular Anatomy of the Lower Limbs
- 12.2. Technical Requirements
  - 12.2.1. Ultrasound Devices and Probes
  - 12.2.2. Curve Analysis
  - 12.2.3. Color Imaging Media
  - 12.2.4. Ultrasound Contrast Agents
- 12.3. Examination Technique
  - 12.3.1. Positioning
  - 12.3.2. Insonation. Examining Technique
  - 12.3.3. Assessment of Normal Flow Curves and Velocities
- 12.4. Major Thoracoabdominal Vessels
  - 12.4.1. Abdominal Venous Vascular Anatomy
  - 12.4.2. Abdominal Arterial Vascular Anatomy
  - 12.4.3. Abdomino-Pelvic Venous Pathology
  - 12.4.4. Abdomino-Pelvic Arterial Pathology
- 12.5. Supra-Aortic Trunks
  - 12.5.1. Venous Vascular Anatomy of the Supra-Aortic Trunks
  - 12.5.2. Arterial Vascular Anatomy of the Supra-Aortic Trunks
  - 12.5.3. Venous Pathology of the Supra-Aortic Trunks
  - 12.5.4. Arterial Pathology of the Supra-Aortic Trunks
- 12.6. Peripheral Arterial and Venous Circulation
  - 12.6.1. Venous Pathology of Lower and Upper Limbs
  - 12.6.2. Arterial Pathology of Lower and Upper Limbs



### Module 13. Clinical Cerebral Ultrasound

- 13.1. Cerebral Hemodynamics
  - 13.1.1. Carotid Circulation
  - 13.1.2. Vertebrobasilar Circulation
  - 13.1.3. Cerebral Microcirculation
- 13.2. Ultrasound Modalities
  - 13.2.1. Transcranial Doppler
  - 13.2.2. Cerebral Ultrasound
  - 13.2.3. Special Tests (Vascular Reaction, HITS, etc.)
- 13.3. Ultrasound Windows and Examination Technique
  - 13.3.1. Ultrasound Windows
  - 13.3.2. Operator Positioning
  - 13.3.3. Examination Sequence
- 13.4. Structural Abnormalities
  - 13.4.1. Collections and Masses
  - 13.4.2. Vascular Abnormalities
  - 13.4.3. Hydrocephalus
  - 13.4.4. Venous Pathology
- 13.5. Hemodynamic Alterations
  - 13.5.1. Spectral Analysis
  - 13.5.2. Hyperdynamic States
  - 13.5.3. Hypodynamics States
  - 13.5.4. Cerebral Asystole
- 13.6. Ocular Ultrasound
  - 13.6.1. Pupil Size and Reactivity
  - 13.6.2. Optic Nerve Sheath Diameter
- 13.7. Doppler Ultrasound in the Diagnosis of Brain Death
  - 13.7.1. Clinical Diagnosis of Brain Death
  - 13.7.2. Prerequisites for Transcranial Doppler (TCD) Examination in Cerebral Circulatory Arrest Diagnosis
  - 13.7.3. TCD Application Technique
  - 13.7.4. Advantages of TCD
  - 13.7.5. Limitations and Interpretation of TCD
  - 13.7.6. TCD Ultrasound for the Diagnosis of Brain Death
  - 13.7.7. The Role of TCD Ultrasound in the Diagnosis of Brain Death

### Module 14. Clinical Abdominal Ultrasound

- 14.1. Anatomical Review
  - 14.1.1. Abdominal Cavity
  - 14.1.2. Liver
  - 14.1.3. Gallbladder and Biliary Tract
  - 14.1.4. Retroperitoneum and Large Vessels
  - 14.1.5. Pancreas
  - 14.1.6. Bladder
  - 14.1.7. Kidneys
  - 14.1.8. Bladder
  - 14.1.9. Prostate and Seminal Vesicles
  - 14.1.10. Uterus and Ovaries
- 14.2. Technical Requirements
  - 14.2.1. Ultrasound Equipment
  - 14.2.2. Types of Transducers for Abdominal Examination
  - 14.2.3. Basic Ultrasound Settings
  - 14.2.4. Patient Preparation
- 14.3. Examination Technique
  - 14.3.1. Examination Planes
  - 14.3.2. Probe Movements
  - 14.3.3. Visualization of Organs According to Conventional Sectioning
  - 14.3.4. Systematic Examination
- 14.4. ECO-FAST Methodology
  - 14.4.1. Equipment and Transducers
  - 14.4.2. FAST I
  - 14.4.3. FAST II
  - 14.4.4. FAST III. Perivesical Effusion
  - 14.4.5. FAST IV. Pericardial Effusion
  - 14.4.6. ECO-FAST V. Exclude ABD Aortic Aneurysm



- 14.5. Ultrasound Scan of the Digestive System
  - 14.5.1. Liver
  - 14.5.2. Gallbladder and Bile Ducts
  - 14.5.3. Pancreas
  - 14.5.4. Bladder
- 14.6. Genitourinary Ultrasound
  - 14.6.1. Kidney
  - 14.6.2. Urinary Bladder
  - 14.6.3. Male Genital System
  - 14.6.4. Female Genital System
- 14.7. Usefulness of ultrasound in renal, hepatic and pancreatic transplant patients.
  - 14.7.1. Normal ultrasound in the patient with renal transplantation
  - 14.7.2. Acute Tubular Necrosis (ATN)
  - 14.7.3. Acute Rejection (AR)
  - 14.7.4. Chronic Transplant Dysfunction
  - 14.7.5. Normal Ultrasound in Liver Transplant Patients
  - 14.7.6. Normal Ultrasound in Pancreas Transplant Patients

## Module 15. Ultrasound Approach to Major Syndromes

- 15.1. Ultrasound in Acute Renal Failure
  - 15.1.1. Introduction
    - 15.1.1.1. Pre-Renal Acute Kidney Injury (AKI)
    - 15.1.1.2. Renal or Intrinsic Acute Kidney Injury (AKI)
    - 15.1.1.3. Post-Renal or Obstructive Acute Kidney Injury (AKI)
  - 15.1.2. Hydronephrosis
  - 15.1.3. Nephrolithiasis (Kidney Stones)
  - 15.1.4. Acute Tubular Necrosis
  - 15.1.5. Doppler Ultrasound in Acute Renal Failure
  - 15.1.6. Bladder Ultrasound in Acute Renal Failure
- 15.2. Ultrasound in Trauma
  - 15.2.1. FAST and e-FAST (Hemothorax and Pneumothorax)
  - 15.2.2. Ultrasound Evaluation in Special Situations
  - 15.2.3. Hemodynamic Assessment Focused on Trauma

- 15.3. Ultrasound in Stroke
  - 15.3.1. Introduction
  - 15.3.2. Justification
  - 15.3.3. Initial Assessment
  - 15.3.4. Ultrasound Evaluation
  - 15.3.5. Ultrasound-Guided Management
- 15.4. Ultrasound in Cardiac Arrest
  - 15.4.1. Cerebral Hemodynamics
  - 15.4.2. Hemodynamics in Cardiac Arrest
  - 15.4.3. Use of Ultrasound During Resuscitation
  - 15.4.4. Use of Ultrasound After Return of Spontaneous Circulation
- 15.5. Ultrasound in Shock
  - 15.5.1. Definition, Types of Shock, and Echocardiographic Findings
    - 15.5.1.1. Definition
    - 15.5.1.2. Types of Shock
    - 15.5.1.3. Advantages of Ultrasound in Recognizing and Managing Different Types of Shock
    - 15.5.1.4. Considerations in the ICU
    - 15.5.1.5. Hemodynamic Monitoring with Ultrasound
- 15.6. Ultrasound in Respiratory Failure
  - 15.6.1. Clinical Etiology of Dyspnea
  - 15.6.2. Approach to the Patient with Dyspnea
  - 15.6.3. Clinical Ultrasound Utility in the Dyspneic Patient
  - 15.6.4. Pulmonary Ultrasound
  - 15.6.5. Echocardiography

## Module 16. Ultrasound-Guided Procedures in Emergencies and Critical Care

- 16.1. Airway Management
  - 16.1.1. Advantages and Indications
  - 16.1.2. Basic Aspects: Ultrasound Specifications and Ultrasound Anatomy
  - 16.1.3. Orotracheal Intubation Technique
  - 16.1.4. Percutaneous Tracheotomy Technique
  - 16.1.5. Common Problems, Complications, and Practical Tips

- 16.2. Vascular Access
  - 16.2.1. Indications and Advantages over Anatomical Reference Techniques
  - 16.2.2. Current Evidence on Ultrasound-Guided Vascular Access
  - 16.2.3. Basic Aspects: Ultrasound Specifications and Ultrasound Anatomy
  - 16.2.4. Ultrasound-Guided Central Venous Cannulation Technique
  - 16.2.5. Ultrasound-Guided Peripheral Catheter and Peripherally Inserted Central Catheter (PICC) Technique
  - 16.2.6. Ultrasound-Guided Arterial Cannulation Technique
  - 16.2.7. Implementation of an Ultrasound-Guided Vascular Access Protocol
  - 16.2.8. Common Problems, Complications, and Practical Tips
- 16.3. Thoracentesis and Pericardiocentesis
  - 16.3.1. Indications and Advantages over Anatomical Reference Techniques
  - 16.3.2. Basic Aspects: Ultrasound Specifications and Ultrasound Anatomy
  - 16.3.3. Ultrasound Specifications and Pericardial Drainage Technique
  - 16.3.4. Ultrasound Specifications and Thoracic Drainage Technique
  - 16.3.5. Common Problems, Complications, and Practical Tips
- 16.4. Paracentesis
  - 16.4.1. Indications and Advantages of the Anatomical Reference Technique
  - 16.4.2. Basic Aspects: Ultrasound Specifications and Ultrasound Anatomy
  - 16.4.3. Ultrasound Specifications and Technique
  - 16.4.4. Common Problems, Complications, and Practical Tips
- 16.5. Lumbar Puncture
  - 16.5.1. Indications and Advantages of the Anatomical Reference Technique
  - 16.5.2. Basic Aspects: Ultrasound Specifications and Ultrasound Anatomy
  - 16.5.3. Technique
  - 16.5.4. Common Problems, Complications, and Practical Tips
- 16.6. Drainage and Catheterization
  - 16.6.1. Suprapubic Catheterization
  - 16.6.2. Drainage of Fluid Collections
  - 16.6.3. Foreign Body Extraction

## Module 17. Clinical Pediatric Ultrasound

- 17.1. Technical Requirements
  - 17.1.1. Ultrasound at the Patients Bedside
  - 17.1.2. Physical Space
  - 17.1.3. Basic Equipment
  - 17.1.4. Equipment for Interventionalist Ultrasounds
  - 17.1.5. Ultrasound Scanners and Probes
- 17.2. Examination Technique
  - 17.2.1. Pediatric Patient Preparation
  - 17.2.2. Tests and Probes
  - 17.2.3. Ultrasound Section Planes
  - 17.2.4. Examination System
  - 17.2.5. Ultrasound-Guided Procedures
  - 17.2.6. Images and Documentation
  - 17.2.7. Test Report
- 17.3. Pediatric Sonoanatomy and Sonophysiology
  - 17.3.1. Normal Anatomy
  - 17.3.2. Sonoanatomy
  - 17.3.3. Sonophysiology of a Child in the Different Stages of Development
  - 17.3.4. Variants of Normality
  - 17.3.5. Dynamic Ultrasound
- 17.4. Ultrasound of the Major Pediatric Syndromes
  - 17.4.1. Emergency Thorax Ultrasound
  - 17.4.2. Acute Abdomen
  - 17.4.3. Acute Scrotum
- 17.5. Ultrasound-Guided Procedures in Pediatrics
  - 17.5.1. Vascular Access
  - 17.5.2. Extraction of Superficial Foreign Bodies
  - 17.5.3. Pleural Effusion
- 17.6. Introduction to Neonatal Clinical Ultrasound
  - 17.6.1. Emergency Transfontanelar Ultrasound
  - 17.6.2. Most Common Examination Indications in Emergencies
  - 17.6.3. Most Common Pathologies in Emergencies



“

*Take a leap in your professional career with TECH!" This 100% online university program will offer you the flexibility you need to train according to your daily commitments."*

04

# Teaching Objectives

This Advanced Master's Degree is designed with clear and ambitious goals, aimed at transforming the professional practice of nurses and elevating the quality of patient care. First and foremost, TECH will provide in-depth, up-to-date knowledge of the theoretical and practical principles of ultrasound. This includes mastering specific techniques as well as understanding the relevant anatomy and physiology for accurate interpretation of ultrasound images. In this way, graduates will develop practical skills that will enable them to perform ultrasounds with confidence and precision.





“

*You will acquire specific knowledge and prepare to be a change agent in the healthcare field. Join this postgraduate program now and transform your professional future!”*



## General Objectives

---

- ♦ Develop skills to perform clinical ultrasounds in various healthcare contexts
- ♦ Apply ultrasound techniques to evaluate the health status of the patient's internal organs
- ♦ Manage the use of clinical ultrasound for the diagnosis and follow-up of diseases
- ♦ Develop competencies in interpreting ultrasound images to identify pathologies
- ♦ Apply ultrasound knowledge for prenatal monitoring and maternal-infant health
- ♦ Develop skills to use ultrasound in medical emergencies for rapid patient assessment
- ♦ Apply clinical ultrasound for the evaluation and treatment of musculoskeletal problems
- ♦ Develop abilities to perform abdominal and renal ultrasounds for disease diagnosis
- ♦ Apply clinical ultrasound for the management of cardiovascular diseases and patient follow-up
- ♦ Develop skills in gynecological ultrasound to assess women's reproductive health
- ♦ Manage the integration of ultrasound in the care of patients with chronic diseases
- ♦ Apply ultrasound to guide invasive procedures such as biopsies and drainages
- ♦ Develop competencies in using ultrasound to assess pulmonary function in respiratory patients
- ♦ Apply clinical ultrasound in the early diagnosis of liver and biliary pathologies
- ♦ Develop skills to perform soft tissue ultrasounds for identifying masses and tumors
- ♦ Apply ultrasound techniques for the diagnosis and treatment of thyroid disorders
- ♦ Manage continuous training in ultrasound techniques to maintain quality standards and precision in procedures





## Specific Objectives

---

### Module 1. Ultrasound Imaging

- ♦ Optimize ultrasound imaging through in-depth knowledge of the physical principles of ultrasound, controls, and the operation of ultrasound machines
- ♦ Master basic and advanced ultrasound procedures, both diagnostic and therapeutic
- ♦ Practice all ultrasound modalities in the safest way for the patient
- ♦ Understand the indications and limitations of Clinical Ultrasound and its application in the most common clinical situations

### Module 2. Clinical Ultrasound of the Head and Neck

- ♦ Investigate the correct processes for performing ultrasound on the upper part of the patient's body
- ♦ Understand the primary reasons and diseases that require brain ultrasound

### Module 3. Clinical Ultrasound of the Digestive Tract and Large Vessels

- ♦ Analyze whether digestive and large vessel issues can be identified from an initial ultrasound image
- ♦ Master ultrasound for diagnosing appendicitis, peritonitis, and the proper medical procedures
- ♦ Act promptly when a digestive problem requires emergency diagnosis
- ♦ Identify the main anomalies affecting the digestive system and large vessels

### Module 4. Genitourinary Clinical Ultrasound

- ♦ Identify the lower region in the ultrasound process and detect potential genitourinary problems
- ♦ Diagnose genitourinary issues using ultrasound in patients
- ♦ Use ultrasound as a preventive protocol for urinary diseases
- ♦ Detail potential anomalies affecting the genitourinary system through image diagnosis

### Module 5. Musculoskeletal Clinical Ultrasound

- ♦ Recognize and identify muscles and bones in the human body
- ♦ Perform ultrasound procedures to diagnose traumatic conditions, fractures, or swelling in patients
- ♦ Identify the primary issues and diseases affecting muscles and causing hypertrophy
- ♦ Conduct pre-surgical ultrasound exams for fractures and lacerations requiring implants or screw placement

### Module 6. Clinical Vascular Ultrasound in Primary Care

- ♦ Identify vascular problems from ultrasound examinations.
- ♦ Know by diagnostic imaging the problems of coagulation and vein tamponade.

#### **Module 7. Clinical Ultrasound in Urgent Care and Emergencies**

- ♦ Identify the proper medical process for performing ultrasound exams in emergency situations
- ♦ Medically diagnose emergencies through ultrasound and determine the appropriate treatment

#### **Module 8. Ultrasound-Guided Procedures in Primary Care**

- ♦ Identify new ultrasound-guided materials and devices in regional anesthesia
- ♦ Analyze new procedures that help identify diseases in patients

#### **Module 9. Other Uses of Clinical Ultrasound**

- ♦ Learn about the latest advancements in ultrasound technology
- ♦ Improve diagnostic accuracy with clinical ultrasound
- ♦ Use ultrasound for pregnant women and baby diagnostics
- ♦ Analyze all the uses of clinical ultrasound

#### **Module 10. Clinical Cardiac Ultrasound**

- ♦ Explain cardiac anatomy
- ♦ Define the technical requirements for cardiac ultrasound
- ♦ Detail the location and visualization of cardiac windows
- ♦ Manage sonoanatomy and sonophysiology in cardiac ultrasound

#### **Module 11. Clinical Thoracic Ultrasound**

- ♦ Explain thoracic anatomy
- ♦ Define the technical requirements for thoracic ultrasound
- ♦ Manage the examination technique in thoracic ultrasound
- ♦ Detail the principles of ultrasound of the chest wall, pleura, and mediastinum

#### **Module 12. Clinical Vascular Ultrasound for Emergencies and Primary Care**

- ♦ Explain vascular anatomy
- ♦ Define the technical requirements for vascular ultrasound
- ♦ Manage the examination technique in vascular ultrasound
- ♦ Explore the principles of ultrasound of the large thoracoabdominal vessels

#### **Module 13. Clinical Cerebral Ultrasound**

- ♦ Describe cerebral hemodynamics
- ♦ Explain the location and visualization of ultrasound windows in cerebral ultrasound
- ♦ Define the different ultrasound modalities in cerebral ultrasound
- ♦ Detail the examination technique in cerebral ultrasound

#### **Module 14. Clinical Abdominal Ultrasound**

- ♦ Explain abdominal anatomy
- ♦ Define the technical requirements for abdominal ultrasound
- ♦ Manage the examination technique in abdominal ultrasound
- ♦ Analyze the ECO FAST methodology



### **Module 15. Ultrasound Approach to Major Syndromes**

- ◆ Explain the use of ultrasound in cardiac arrest
- ◆ Define the application of ultrasound in shock
- ◆ Explore the use of ultrasound in respiratory failure
- ◆ Manage the application of ultrasound in sepsis

### **Module 16. Ultrasound-Guided Procedures in Emergencies and Critical Care**

- ◆ Explain the process of performing ultrasound-guided intubation
- ◆ Describe the technique for vascular cannulation using ultrasound
- ◆ Address the process of performing ultrasound-guided thoracentesis
- ◆ Analyze the technique of ultrasound-guided pericardiocentesis

### **Module 17. Clinical Pediatric Ultrasound**

- ◆ Define the technical requirements for pediatric ultrasound
- ◆ Explain the examination technique in pediatric ultrasound
- ◆ Describe pediatric sonoanatomy and sonophysiology
- ◆ Explore the application of ultrasound in major pediatric syndromes



*Transform your career with this academic opportunity and master essential techniques such as abdominal and cardiac ultrasound. Enroll now and become a key professional in the healthcare of the future!”*

05

# Career Opportunities

This university qualification represents an open door to a world of professional opportunities in the healthcare field. Upon completing the Grand Master, graduates will be equipped with advanced skills that will allow them to perform in various clinical areas, from emergencies to intensive care and primary care. In addition, they will have the opportunity to work in critical care units and take on roles in diagnostic imaging services, collaborating closely with radiologists and other specialists.



“

*What are you waiting for to take a decisive step towards a successful and opportunity-filled career? Join this university program and transform your professional profile to position yourself as a key player in the future of healthcare”*



### Graduate Profile

The graduate will not only have acquired advanced technical knowledge in Ultrasound, but also developed a comprehensive profile that will position them as a leader in their field. Therefore, the profile will combine clinical skills, analytical ability, and a patient-centered approach, allowing them to provide high-quality care tailored to individual needs. Furthermore, this expert will be capable of performing and interpreting ultrasounds in various clinical areas, such as emergencies, intensive care, and primary care.

*This academic path will not only provide the most advanced techniques but will also use innovative approaches to help you assimilate each concept effectively. Seize this unique opportunity!*

- ♦ **Effective Communication:** Explain ultrasound procedures, interpret results, and offer recommendations, improving the relationship with patients and fostering a collaborative environment within the multidisciplinary team.
- ♦ **Critical Thinking and Problem Solving:** Foster the development of critical thinking, enabling nurses to analyze complex information and make informed decisions in challenging clinical situations.
- ♦ **Adaptability and Flexibility:** Integrate ultrasound into daily practice, adjusting to the specific demands of each clinical situation and improving versatility as professionals.
- ♦ **Teamwork:** Develop skills to work effectively in multidisciplinary teams, learning to coordinate efforts and share knowledge to optimize patient care.





After completing the university program, you will be able to apply your knowledge and skills in the following positions:

1. **Specialist Nurse in Ultrasound:** Responsible for performing and analyzing ultrasounds in various clinical areas, such as emergencies and intensive care.
2. **Ultrasound Services Coordinator:** Manager of the ultrasound department in hospitals or clinics, overseeing the technical team and ensuring quality standards in procedures.
3. **Ultrasound Researcher:** Developer of research projects related to clinical ultrasound, analyzing data and contributing to the management of new techniques and protocols.
4. **Critical Care Nurse:** Responsible for using ultrasound as a diagnostic tool to rapidly assess the condition of critically ill patients, improving decision-making in emergency situations.
5. **Clinical Ultrasound Consultant:** Advisor in healthcare institutions on the implementation and optimization of ultrasound usage.
6. **Quality Manager in Ultrasound:** Responsible for ensuring that all ultrasound procedures are performed in compliance with established regulations and standards, promoting continuous improvement in the service.
7. **Vascular Ultrasound Technician:** Specialist in ultrasound assessments of the vascular system, helping diagnose conditions such as thrombosis or venous insufficiency through accurate imaging.
8. **Clinical Research Nurse:** Overseer of clinical trials involving the use of ultrasounds, contributing to the validation of new techniques and evidence-based treatments.
9. **Healthcare Project Manager:** Developer of initiatives to implement ultrasound services in medical institutions, coordinating human and technical resources to ensure efficient operation.

06

# Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.



“

*TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”*



## The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

“

*At TECH you will NOT have live classes  
(which you might not be able to attend)”*



### The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

“*TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want*”



## Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.



## Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

*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.*



## A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



*The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule"*

### The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
2. Learning is solidly translated into 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.



### The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

*Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.*

*You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.*



As such, the best educational materials, thoroughly prepared, will be available in this program:



#### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly 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.



#### Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



#### Interactive Summaries

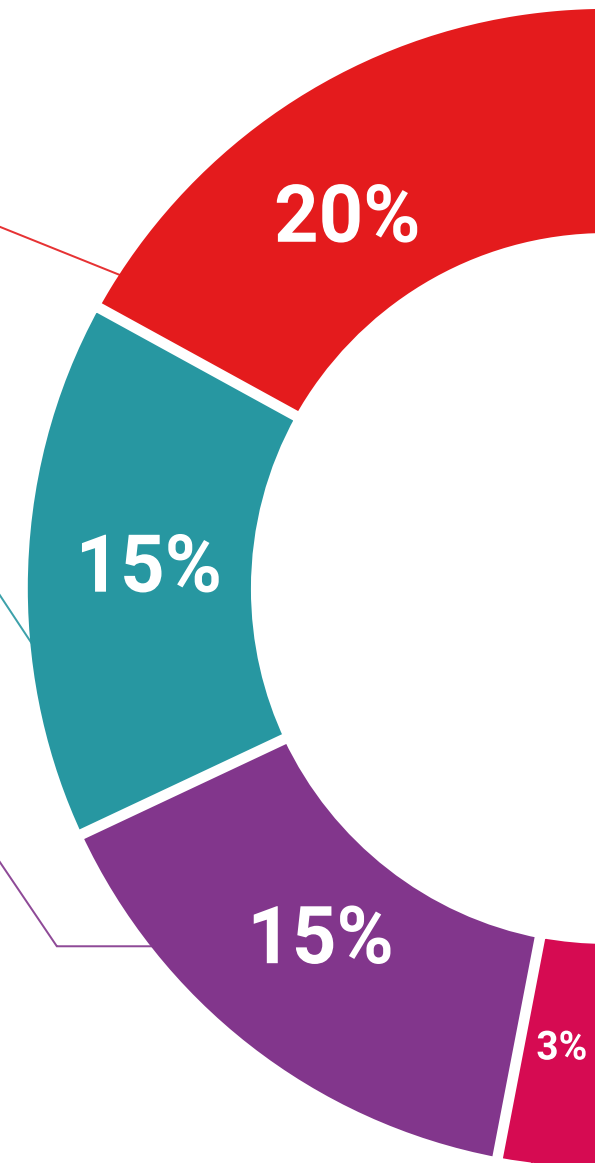
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

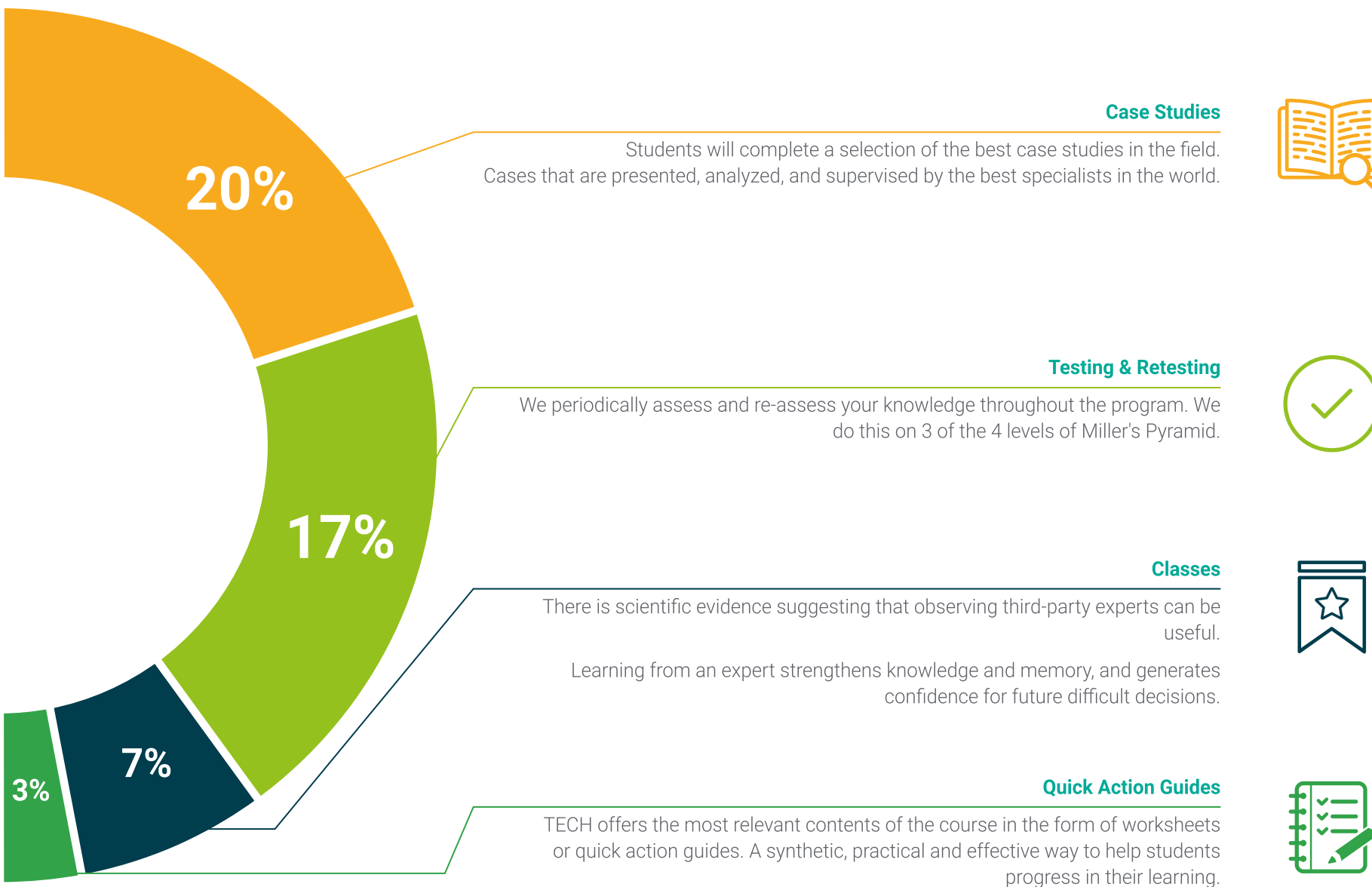


#### Additional Reading

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







07

# Teaching Staff

This training is distinguished not only by its cutting-edge academic content but also by the exceptional quality of its faculty. In this regard, the program boasts a team of highly qualified professionals, consisting of experts in clinical ultrasound, nursing, and related fields, who bring a wealth of experience both in academia and clinical practice. Each member has been carefully selected for their professional background and academic commitment. All of this ensures that graduates will receive training based on the latest research and advancements in the field of ultrasound.



“

*By choosing this postgraduate program, you will not only gain access to high-quality content but also benefit from the knowledge and experience of professionals dedicated to your success”*

## Management



### Dr. Fumadó Queral, Josep

- ♦ Head of the Emergency Ultrasound Group of the Spanish Society of General and Family Physicians (SEMG).
- ♦ Graduate in Clinical Ultrasound and Training of Trainers from the University of Montpellier
- ♦ 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.
- ♦ Professor on the Master's Degree in Clinical Ultrasound for Emergencies and Critical Care at the CEU Cardenal Herrera University.



### Dr. Pérez Morales, Luis Miguel

- ♦ Family physician at the Primary Care Center of Arucas (Gran Canaria, Canary Islands).
- ♦ President and Professor of the Canary Society of Ultrasound (SOCANECO) and Director of its Annual Symposium
- ♦ Professor on the Master's Degree in Clinical Ultrasound for Emergency and Critical Care at the CEU Cardenal Herrera University
- ♦ Expert in Thoracic Ultrasound by the University of Barcelona
- ♦ Expert in Clinical Abdominal and Musculoskeletal Ultrasound for Emergencies and Critical Care by the University CEU Cardenal Herrera
- ♦ Diploma of the Curs d'Ecografia en Atenció Primària by the University Rovira i Virgili from the Institut Català de la Salut



### **Dr. Álvarez Fernández, Jesús Andrés**

- ♦ Head Physician at the Juaneda Miramar Hospital
- ♦ Specialist in Intensive Care Medicine and Burn Patient Management at the University Hospital of Getafe
- ♦ Associate Researcher in the area of Neurochemistry and Neuroimaging at the University of La Laguna

## **Teachers**

### **Dr. Herrera Carcedo, Carmelo**

- ♦ Physician at San Juan de Dios Hospital
- ♦ Family Physician of the Ultrasound Unit at the Briviesca Health Center
- ♦ Tutor at the Family and Community Medicine Teaching Unit in 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**

- ♦ Expert in Sport Medicine and University Professor
- ♦ Founder and Director of Sportoledo
- ♦ Researcher at the Laboratory of Sports Performance and Injury Readaptation of the University of Castilla La Mancha
- ♦ Member of the Medical Service at Club Baloncesto Fuenlabrada.
- ♦ PhD in Medicine and Surgery by University of Cordoba
- ♦ President of the Spanish Society of Ultrasound.
- ♦ Member of: Spanish Society of Sports Medicine, European Federation of Societies for Ultrasound in Medicine and Biology



**Dr. Sánchez Sánchez, José Carlos**

- ♦ Director of the Ultrasound Tasks Group of the Spanish Society of General and Family Physicians.
- ♦ Specialist Medical Officer in Radiodiagnosis at the Poniente Hospital, El Ejido
- ♦ Master's Degree in Updating in Diagnostic and Therapeutic Techniques in Radiology by the Cardenal Herrera University.
- ♦ University Expert in Technique and instrumentation, radiology emergencies and Interventional neuro radiology by Francisco de Vitoria University.
- ♦ University Expert in Cardiothoracic Radiology and Vascular and Interventional Radiology by the Francisco de Vitoria University.
- ♦ Expert in Imaging Techniques in Breast Pathology and Breast Radiology by the University of Barcelona.

**Dr. Arancibia Zemelman, Germán**

- ♦ Musculoskeletal Teleradiologist (MRI) at Hospital San Jose in Santiago de Chile
- ♦ Staff Radiologist at Indisa Clinic in Santiago de Chile
- ♦ Staff Radiologist at Meds Medicina Deportiva Clínica in Santiago de Chile
- ♦ Staff Radiologist at Hospital del Trabajador in Santiago
- ♦ Zone General Physician and Director of the Puerto Aysén Hospital, Chilean Patagonia.
- ♦ Specialization in Imaging at the Clinical Hospital of the University of Chile.
- ♦ Specialization in Musculoskeletal Radiology at Henry Ford Hospital, Detroit, Michigan, USA.
- ♦ Member of: Radiological Society of North America, Argentine Society of Ultrasound and Ultrasonography

**Dr. Barceló Galíndez, Juan Pablo**

- ♦ Medical Director at Bridgestone Hispania, S.A., Bilbao
- ♦ Ultrasound Service in Mutualia Ercilla Clinic
- ♦ Medical Specialist in Occupational Medicine

**Dr. Cabrera González, Antonio José**

- ♦ General Practitioner at the Arucas Medical Center in Las Palmas de Gran Canaria
- ♦ General Practitioner at the Tamaraceite Health Center in Las Palmas de Gran Canaria.
- ♦ Expert in Medical Services of Recognition in Consultation and Radiodiagnostics

**Dr. Corcoll Reixach, Josep**

- ♦ Coordinator in charge of Clinical Ultrasound for the Medical Direction of the Primary Care Management of Mallorca.
- ♦ Former General Director of Planning and Financing of the Ministry of Health of the Balearic Islands
- ♦ Family Doctor at the Tramuntana Health Center.
- ♦ Master's Degree in Management and Administration from the National School of Health of the Carlos III Health Institute.
- ♦ Diploma in Pulmonary Ultrasound in Disease by COVID-19
- ♦ Member of the Spanish Society of Family and Community Medicine.

**Dr. De Varona Frolov, Serguei**

- ♦ Medical Specialist in Angiology and Vascular Surgery of the Canary Islands Institute of Advanced Medicine
- ♦ Angiologist at Dr. Negrin University Hospital of Gran Canaria
- ♦ Master's Degree in Endovascular Techniques by Boston Scientific P.L.

**Dr. Donaire Hoyas, Daniel**

- ♦ Specialist in Orthopedic Surgery and Traumatology at Virgen de las Nieves Hospital
- ♦ Specialist in Orthopedic Surgery and Traumatology at the Hospital de Poniente, El Ejido.
- ♦ Orthopedic doctor at the Almeria Institute of Orthopedic Surgery and Traumatology.
- ♦ Training in Periprosthetic Hip and Knee Infection at Endoklinik Hospital, Hamburg
- ♦ Training in Orthopedics and Traumatology at the Trauma Unit of the John Radcliff Hospital attached to the University of Oxford.

**Mr. Fabián Feroso, Antonio**

- ♦ Software Engineer at GE Healthcare
- ♦ Product Specialist of the Operating Room Unit for Prim S.A.
- ♦ Engineer for Skyter's Medical, Endoscopy and Traumatology Business Unit.
- ♦ Master's Degree in Business Administration by ThePower Business School

**Mr. Gálvez Gómez, Francisco Javier**

- ♦ Head of Marketing of the Ultrasound Division of SIEMENS Healthcare for Spain and Southern Europe.
- ♦ General Ultrasound Imaging Application Specialist for SIEMENS Healthcare in Madrid.
- ♦ Ultrasound GI modality and point-of-care leader at GE Healthcare Spain
- ♦ Imaging Department Manager for Disa- BK Distributor
- ♦ Researcher for Naturin Analytical Laboratory GmbH

**Dr. Argüeso García, Mónica**

- ♦ Attending physician of the Intensive Care Medicine Service at the Gran Canaria Island Maternity Hospital
- ♦ Doctor of Medicine
- ♦ Instructor in Advanced Life Support of the SEMICYUC national CPR plan
- ♦ Clinical Simulation Instructor
- ♦ Bachelor's Degree in Medicine and Surgery

**Dr. Herrero Hernández, Raquel**

- ♦ Specialist in Intensive Care Medicine
- ♦ Assistant Physician of the Intensive Medicine. Department, Getafe University Hospital.
- ♦ Author of numerous scientific publications
- ♦ PhD in Medicine from the Autonomous University of Madrid

**Dr. Igeño Cano, José Carlos**

- ♦ Head of the Intensive Medicine and Emergency Service at the San Juan de Dios Hospital in Córdoba
- ♦ Responsible for the Patient Welfare Area in the HUCI Project, Humanizing Intensive Care
- ♦ Coordinator of the Planning and Organization and Management Working Group of the Spanish Society of Intensive Care Medicine, Critical Care and Coronary Units (SEMICYUC)
- ♦ Medical Director of the Resuscitation and Post-Surgical Care Unit of the IDC Salud Virgen de Guadalupe Hospital
- ♦ Attending ICU Physician in the Health Service of Castilla, La Mancha
- ♦ Assistant Physician of the Medicine and Neurotrauma Unit of the Nuestra Señora de la Candelaria Hospital
- ♦ Head of Critical Patient Transport Service in Ambulances Juan Manuel SL
- ♦ Master's in Clinical Administration, Medical and Healthcare Management from CEU Cardenal Herrera University
- ♦ Member of: Pan-American and Iberian Federation of Critical Medicine and Intensive Care; Spanish Society, Intensive Care Medicine, Critical Care and Coronary Units

**Dr. León Ledesma, Raquel**

- ♦ Specialist of the General and Digestive System Surgery Department at Getafe University Hospital
- ♦ Specialist of the Gynecology and Obstetrics Department at Getafe University Hospital
- ♦ Specialist in Bariatric and Pancreatic Surgery
- ♦ Expert in Breast Cancer
- ♦ Bachelor's Degree in Medicine and Surgery

**Dr. López Rodríguez, Lucía**

- ♦ Medical Specialist of the Department of Intensive Care Medicine and Major Burns of Getafe University Hospital
- ♦ Doctor of Medicine, UCM
- ♦ Degree in Medicine and Surgery from the UCM.
- ♦ Member of the EcoClub of SOMIAMA.

**Dr. Martín del Rosario, Francisco Manuel**

- ♦ Specialist of the Rehabilitation Service of the Gran Canaria Island Hospital Maternity and Children's Hospital Complex
- ♦ Physician at the Upper Limb and Hand Pathology Unit of the Gran Canaria Island Hospital Maternity and Children's Hospital Complex
- ♦ Private medical assistant in Policlínico León y Castillo
- ♦ Private medical assistant at Policlínico EMSAIS
- ♦ Consultant Rehabilitation Physician of Aeroméica Canaria

**Mr. Moreno Valdés, Javier**

- ♦ Business Manager of the Ultrasound Division at Canon Medical Systems for Spain
- ♦ Advisor to the Resident Workgroup of the Spanish Society of Medical Radiology
- ♦ Master's Degree in Business Administration from EAE Business School

**Dr. Santos Sánchez, José Ángel**

- ♦ Medical specialist in the University Hospital of Salamanca
- ♦ Medical specialist in Traumatology and Orthopedic Surgery at the Provincial de Plasencia Health Complex
- ♦ Master's Degree in Direction and Management of Health Services by the European Institute of Health and Social Welfare.
- ♦ Master's Degree in ICT Resources in the Teaching and Learning Process by the University of Salamanca
- ♦ Member of the Advanced Medical Visualization Group of the University of Salamanca.

**Dr. Segura Blázquez, José María**

- ♦ Family Doctor at the Canary Institute of Advanced Medicine
- ♦ Family Doctor at the Canalejas Health Center in Las Palmas de Gran Canaria
- ♦ Family Doctor in Tres Ramblas Medical Center of Las Palmas de Gran Canaria
- ♦ Master's Degree in Public Health and Epidemiology at the University of Las Palmas de Gran Canaria.
- ♦ Member of: Spanish Society of Primary Care Physicians, Canary Society of Ultrasound

**Dr. Wagüemert Pérez, Aurelio**

- ♦ Interventional Pneumologist at the University Hospital San Juan de Dios
- ♦ Interventional Pneumologist at Cardivant Medical Center
- ♦ Interventional Pneumologist at Clinica Tu Consulta
- ♦ Interventional Pulmonologist at the University Hospital of the Canary Islands

**Dr. López Cuenca, Sonia**

- ♦ Specialist in Family Medicine and Intensive Care at the Rey Juan Carlos University Hospital
- ♦ Intensivist at the University Hospital of Getafe
- ♦ Researcher of the Madrid Health Service
- ♦ Intensivist at the Hospital Los Madroños
- ♦ Out-of-hospital emergency physician in SUMMA

**Dr. Ortigosa Solórzano, Esperanza**

- ♦ Specialist of the Pain Unit of the Anesthesia Service at the Getafe University Hospital
- ♦ Head Editor of the Spanish Journal multidisciplinary of Pain
- ♦ Head Editor of the Journal Arydol, a four-monthly publication of the Spanish Association of Regional Anesthesia and Chronic Pain.
- ♦ Member of: Spanish Multidisciplinary Pain Society, Spanish Association of Regional Anesthesia and Chronic Pain and European Society of Regional Anesthesia and Pain Therapy

**Dr. Flores Herrero, Ángel**

- ♦ Coordinator of the Angiology, Vascular and Endovascular Surgery Service of the Quirón Salud Toledo Hospital
- ♦ FEA of Vascular Surgery at the Enova Medical Center.
- ♦ Assistant Physician of Vascular Surgery at the Toledo Hospital Complex.
- ♦ Member of the American Society of Surgeons.
- ♦ Collaborating Professor at the Catholic University San Antonio de Murcia (UCAM)
- ♦ European Board of Vascular Surgery Examiner and Fellow of the American College of Surgeons
- ♦ Doctor of Medicine and Surgery
- ♦ Master's Degree in Hospital Management

**Dr. Martínez Crespo, Javier**

- ♦ Specialist in Intensive Care Medicine
- ♦ Attending Physician in Radiodiagnostics, University Hospital of Getafe
- ♦ Collaborator of the Ecoclub of SOMIAMA
- ♦ Bachelor's Degree in Medicine and Surgery
- ♦ Associate Professor at the European University of Madrid

**Dr. Osiniri Kippes, María Inés**

- ♦ Pediatrics, Pediatric Ultrasound and Pediatric Nephrology at Clínica Bofill, Girona
- ♦ Doctor of Medicine. Research in medical and clinical laboratory with Cum Laude excellence by the University of Girona.
- ♦ Master in Health Promotion, University of Girona.
- ♦ Degree in Pediatric Ultrasound by the Spanish Society of Ultrasound.
- ♦ Pediatric Ultrasonographer, Ecopediatrics. Figueres
- ♦ Assistant Pediatrician Head of Pediatric Ultrasound, Fundació Salut Empordà, Hospital de Figueres.

**Dr. Vollmer Torrubiano, Iván**

- ♦ Specialist Physician in the Radiology Department of the Hospital Clínic de Barcelona.
- ♦ Adjunct Coordinator of the Lung Cancer Functional Unit at Hospital del Mar.
- ♦ European Diploma in Radiology
- ♦ Specialized training in Radiodiagnosis at the Hospital del Mar in Barcelona.
- ♦ Graduate in Medicine and Surgery from the University of Barcelona
- ♦ Scientific responsible of the Spanish Society of Cardiothoracic Imaging (SEICAT).
- ♦ President of the Oncology Commission of the Spanish Society of Medical Radiology (SERAM).
- ♦ Member of the Scientific Committee of the National Congress of SERAM.
- ♦ Member of the Scientific Committee of the National Congress of Radiologists of Cataluña.

**Dr. Vicho Pereira, Raúl**

- ♦ Clinical Chief of ICU at Quirónsalud Palmaplanas Hospital, Balearic Islands
- ♦ President of the Spanish Society for Ultrasound in Critical Cases (ECOCRITIC)
- ♦ Instructor of the National CPR Plan
- ♦ Specialist in Intensive Medicine at Quirónsalud Palmaplanas Hospital, Balearic Islands
- ♦ Specialist in Intensive Medicine at Virgen de Valme University Hospital, Seville
- ♦ Intensive Care Unit Specialist at Quirónsalud Palmaplanas Hospital, Balearic Islands
- ♦ Intensive Care Unit Specialist at Rotger Quirónsalud Clinic, Balearic Islands
- ♦ Teaching Coordinator for Internal Medicine Residents in Ultrasound for Critical Care
- ♦ Expert Reviewer for the journal Medicina Intensiva
- ♦ Over 150 Ultrasound courses in the last 5 years across all autonomous communities in the country for ICU, Anesthesia, and Emergency Medicine
- ♦ Organizer of the First ECOCRITIC Congress, Denia, Alicante
- ♦ Ultrasound Trainer for the entire ICU service at Donostia University Hospital, Basque Country
- ♦ Trainer in Ultrasound for the ICU Service at Manises Hospital, Valencia
- ♦ Bachelor's Degree in Medicine and Surgery from the University of Seville
- ♦ Member of: Editorial Board of the e-Anestesiari journal, Spanish Society of Ultrasound in Critical Care

**Dr. Abril Palomares, Elena**

- ♦ Specialist Physician of the Intensive Care and Major Burns Service at the Getafe University Hospital
- ♦ Bachelor's Degree in Medicine and Surgery
- ♦ Medical Specialist in Intensive Care and Major Burns Medicine



**Dr. Álvarez González, Manuel**

- ♦ Faculty Specialist at Hospital Clínico San Carlos
- ♦ Specialist in Intensive Care Medicine
- ♦ Founding Member of the Ecoclub of SOMIAMA
- ♦ Bachelor's Degree in Medicine and Surgery

**Dr. Colinas Fernández, Laura**

- ♦ Attending Physician of Intensive Care Medicine at the Toledo University Hospital Complex.
- ♦ Bachelor's Degree in Medicine and Surgery
- ♦ Member of: Spanish Society for Ultrasound in Critical Cases (ECOCRITIC)

**Dr. De la Calle Reviriego, Braulio**

- ♦ Chief of Intensive Care Medicine and Transplant Coordinator at the Gregorio Marañón Hospital.
- ♦ Chief of Service at the Hospital Quirón San José
- ♦ Collaborating Professor at the Complutense University of Madrid.
- ♦ Trainer in Brain Ultrasound of the National Transplant Organization.
- ♦ Member of: Gregorio Marañón Institute of Health Research

**Dr. Hernández Tejedor, Alberto**

- ♦ Specialist in Intensive Care Medicine
- ♦ Attending Physician of Intensive Care Medicine at Hospital Universitario Fundación Alcorcón
- ♦ Intensivist at Hospital Universitario Quirón Madrid
- ♦ Author of dozens of scientific publications

**Dr. Lamarca Mendoza, María Pilar**

- ♦ Assistant Physician of the Department of Angiology, Vascular and Endovascular Surgery of the Toledo Hospital Complex.
- ♦ Medical specialist in SESCOAM (Health Service of Castilla-La Mancha).
- ♦ Author of numerous publications and scientific essays at national and international level.
- ♦ Degree in Medicine and Surgery from the Autonomous University of Madrid.

**Dr. Martínez Díaz, Cristina**

- ♦ Specialist in Intensive Care Medicine
- ♦ Bachelor's Degree in Medicine and Surgery
- ♦ Doctor at the University Hospital Príncipe of Asturias. Alcalá Henares University
- ♦ Member of the EcoClub of SOMIAMA.

**Dr. Mora Rangil, Patricia**

- ♦ Specialist in Intensive Care Medicine, Miguel de Servet Hospital, Zaragoza, Spain.
- ♦ Doctor at Miguel Servet Hospital, Zaragoza, Spain
- ♦ Graduate of the Faculty of Medicine, Rovira I Virgili University, Tarragona, Spain.
- ♦ Degree in Medicine. MIR in Intensive Care, Miguel Servet University Hospital
- ♦ Member of the Spanish Society of Critical Care Ultrasound, ECOCRITIC
- ♦ Author of the book *Paciente crítico Drugs, frequently used fluid therapy and hydroelectrolytic alterations.*

**Dr. Ortuño Andériz, Francisco**

- ♦ Physician in the Neurocritical Care and Polytrauma Section at the San Carlos Clinical Hospital
- ♦ Specialist in Intensive Care Medicine
- ♦ Doctor of Medicine and Surgery, Complutense University of Madrid (UCM)
- ♦ Master's Degree in Organization, Management and Administration of Social and Health Care Services

**Dr. Palacios Ortega, Francisco de Paula**

- ♦ Specialist in Intensive Care Medicine
- ♦ Senior Physician in the Intensive Care Unit at Getafe University Hospital
- ♦ Collaborating Physician with the AIKE (Artificial Intelligence and Knowledge Engineering) group, University of Murcia
- ♦ Research Collaborator with the WASPSS group, focusing on the rational use of antibiotics
- ♦ Speaker at the Surgical Studies Center Lecture Series, Complutense University of Madrid

**Dr. Phillipps Fuentes, Federico**

- ♦ On-call Pediatrician at the Pediatric Emergency Service of the Sor M<sup>a</sup> Ludovica Children's Hospital in La Plata
- ♦ Specialist Physician in the Pediatric Emergency Department at the Materno Insular University Hospital of the Canary Islands
- ♦ Chief of Pediatric Resident Physicians at the Dr. Pedro de Elizalde Children's Hospital
- ♦ Pediatrician in the Outpatient Specialty Consultations at the Perpetuo Socorro Hospital in Las Palmas de Gran Canaria

**Dr. Serna Gandía, María**

- ♦ Medical Specialist in Anesthesiology and Resuscitation at the Hospital de Dénia Marina Salud, Alicante.
- ♦ Secretary of the Spanish Society of Critical Care Ultrasound (ECOCRITIC).
- ♦ Speaker in courses and practical workshops on the use of Ultrasound in Intensive Care
- ♦ Bachelor's Degree in Medicine and Surgery
- ♦ Specialist in Anesthesiology and Resuscitation
- ♦ Course for the management of Ultrasonography in the ICU

**Dr. Temprano Vázquez, Susana**

- ♦ Attending Physician, Intensive Care Medicine Department, 12 de Octubre University Hospital.
- ♦ Teacher's staff of the classroom part of the course ECMO Hybrid Course
- ♦ Founding Member of the Ecoclub of SOMIAMA
- ♦ Bachelor's Degree in Medicine and Surgery
- ♦ Specialist in Intensive Care Medicine

**Dr. Villa Vicente, Gerardo**

- ◆ Physician of the Spanish Paralympic Committee
- ◆ Medical Specialist in Physical Education and Sports Medicine
- ◆ Professor of Physical Education and Sports at the University of León.
- ◆ Director of fourteen doctoral theses, three master's theses, and thirteen doctoral research projects (DEA)
- ◆ Doctor of Medicine and Surgery from the University of Salamanca
- ◆ Specialist in Physical Education and Sports Medicine from the University of Oviedo
- ◆ Expert in MSK Ultrasound (SEMED-FEMEDE)
- ◆ National Sports Medicine Award
- ◆ Member of: Institute of Biomedicine of León (IBIOMED), Spanish Paralympic Committee, Parliamentary Commission on the State of Sport (Healthy Lifestyle) of the Parliament of Castilla y León, Group of Experts in Physical Activity and Health for the Development of the A+D Plan of the Superior Sports Council (CSD).

**Dr. Yus Teruel, Santiago**

- ◆ Transplant Coordinator at the La Paz University Hospital of Madrid
- ◆ Specialist in Intensive Care Medicine
- ◆ Attending Physician in Intensive Medicine at the La Paz-Carlos III University Hospital Complex
- ◆ Member of the EcoClub of SOMIAMA.
- ◆ Bachelor's Degree in Medicine and Surgery

# 08 Certificate

The Advanced Master's Degree in Clinical Ultrasound for Nursing guarantees students, in addition to the most rigorous and up-to-date education, access to a diploma for the Advanced Master's Degree issued by TECH Global University.





“

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



This private qualification will allow you to obtain a **Postgraduate Certificate in Nombre del Programa** 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** private qualification 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.

TECH is a member of the **National League for Nursing (NLN)**, the largest and most established nursing association in the world. This affiliation highlights its commitment to excellence and professional development in the healthcare field.

#### Accreditation/Membership

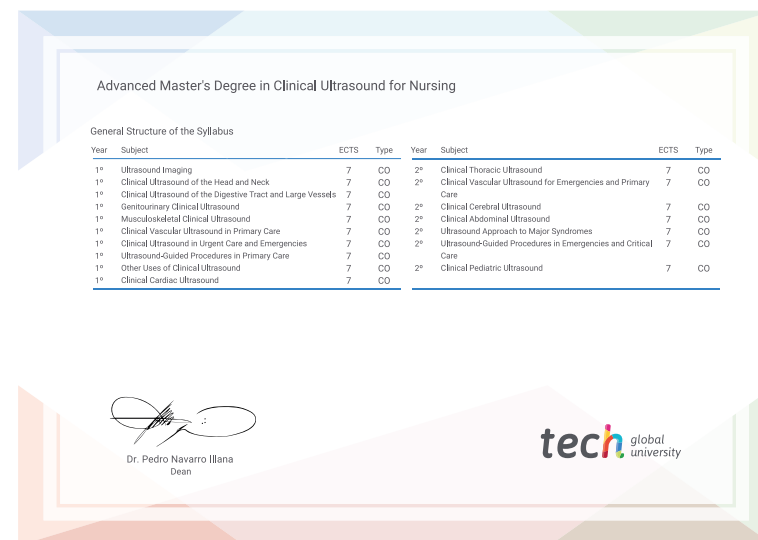


Title: **Advanced Master's Degree in Clinical Ultrasound for Nursing**

Modality: **online**

Duration: **2 years**

Accreditation: **120 ECTS**





## Advanced Master's Degree Clinical Ultrasound for Nursing

- » Modality: online
- » Duration: 2 years
- » Certificate: TECH Global University
- » Accreditation: 120 ECTS
- » Schedule: at your own pace
- » Exams: online

# Advanced Master's Degree Clinical Ultrasound for Nursing

Accreditation/Membership

