

# Postgraduate Certificate

## Ultrasound Approach to Major Syndromes





## Postgraduate Certificate Ultrasound Approach to Major Syndromes

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/medicine/postgraduate-certificate/ultrasound-approach-major-syndromes](http://www.techtute.com/us/medicine/postgraduate-certificate/ultrasound-approach-major-syndromes)

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01

# Introduction

Ultrasound has been associated with many medical care advances in the last 40 years and has become an essential tool in dealing with all kinds of patients. The use of Ultrasound is an evolving medical paradigm of the 21st century, changing from being restricted to Radiodiagnostic services to now being implemented in all healthcare environments.



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

Clinical Ultrasound enhances the ability to diagnose and treat patients in emergency or critical care situations, therefore, it is becoming an increasingly popular and valuable tool to guide diagnostic and therapeutic interventions.

Its advantages include portability, accuracy, real-time visualization, reproducibility and efficiency (cost/effectiveness). Its usefulness has been demonstrated in various hospital scenarios (emergency, intermediate care, semi-critical or intensive care, operating rooms, resuscitation, hospitalization, consultations, etc.), as well as in out of hospital situations (home, public roads, health centers, emergencies, ambulances, etc.).

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

This **Postgraduate Certificate in Ultrasound Approach to Major Syndromes** contains the most complete and up-to-date scientific program on the market. The most important features of the program include:

- ♦ Development of clinical cases presented by experts in ultrasound imaging
- ♦ 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.
- ♦ New developments in the ultrasound approach to major syndromes
- ♦ An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course.
- ♦ With a special emphasis on evidence-based medicine and research methodologies in the use of ultrasound in emergency and critical care.
- ♦ All of this will be complemented by theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments.
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



*Update your knowledge through the Postgraduate Certificate in Ultrasound Approach to Major Syndromes in a practical way and adapted to your needs”*

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*This Postgraduate Certificate is the best investment you can make when selecting a refresher program, for two reasons: in addition to updating your knowledge in **Ultrasound Approach to Major Syndromes**, you will obtain a qualification endorsed by **TECH Global University**”*

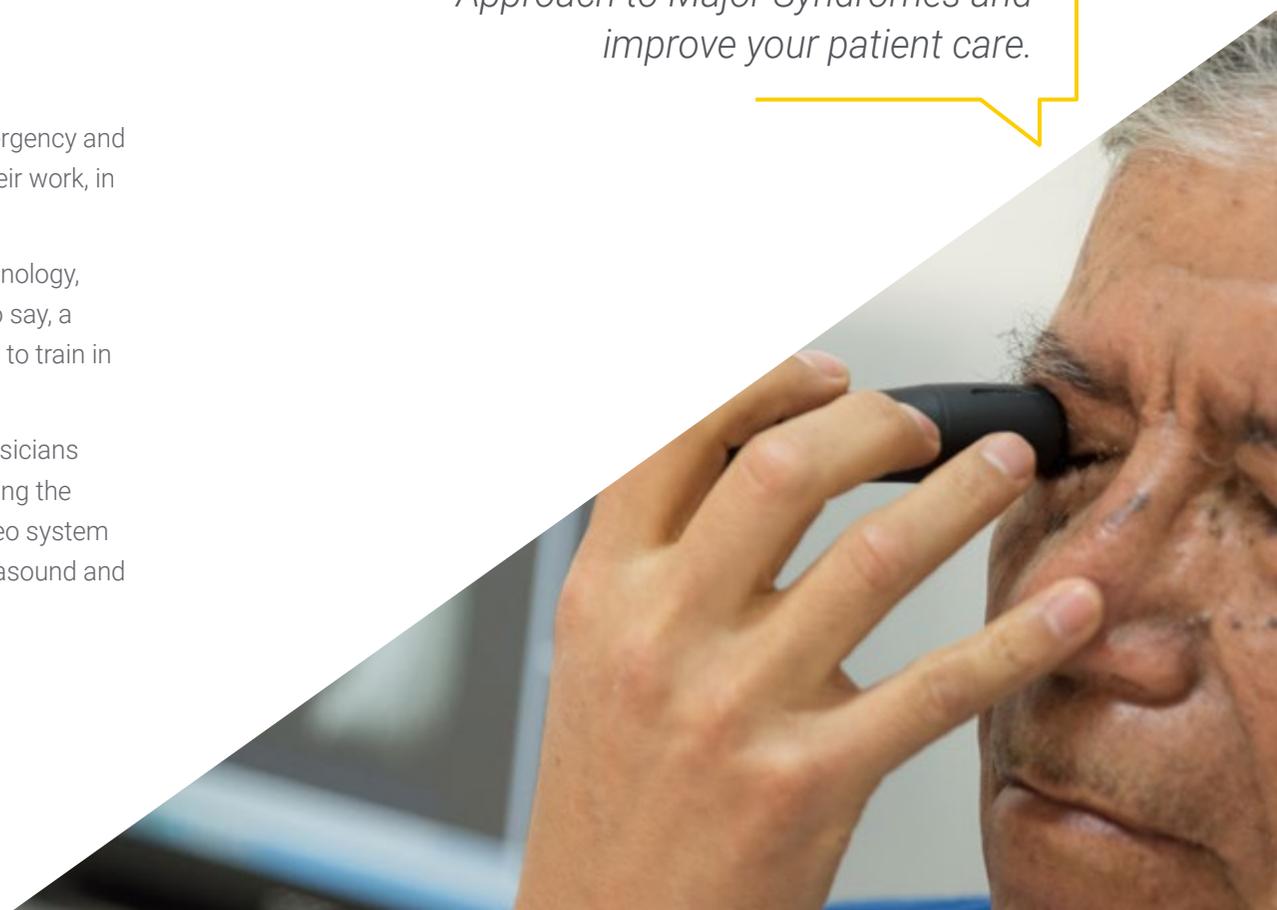
Its teaching staff includes health professionals belonging to the field of emergency and critical care ultrasound, who bring to this specialization the experience of their work, in addition to recognized specialists belonging to leading scientific societies.

Thanks to its multimedia content developed with the latest educational technology, they will allow the professionals a situated and contextual learning, that is to say, a simulated environment that will provide an immersive learning programmed to train in real situations.

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

*The Postgraduate Certificate includes real clinical cases and exercises to bring the content of the course closer to the clinical practice of a physician.*

*Make the most of this opportunity to update your knowledge in **Ultrasound Approach to Major Syndromes** and improve your patient care.*



# 02 Objectives

The main objective of the program is the development of theoretical and practical learning, so that the physician can master in a practical and rigorous way the Ultrasound Approach to Major Syndromes.





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*This program will provide you with the skills to carry out your medical praxis with confidence and will help you to grow both personally and professionally”*



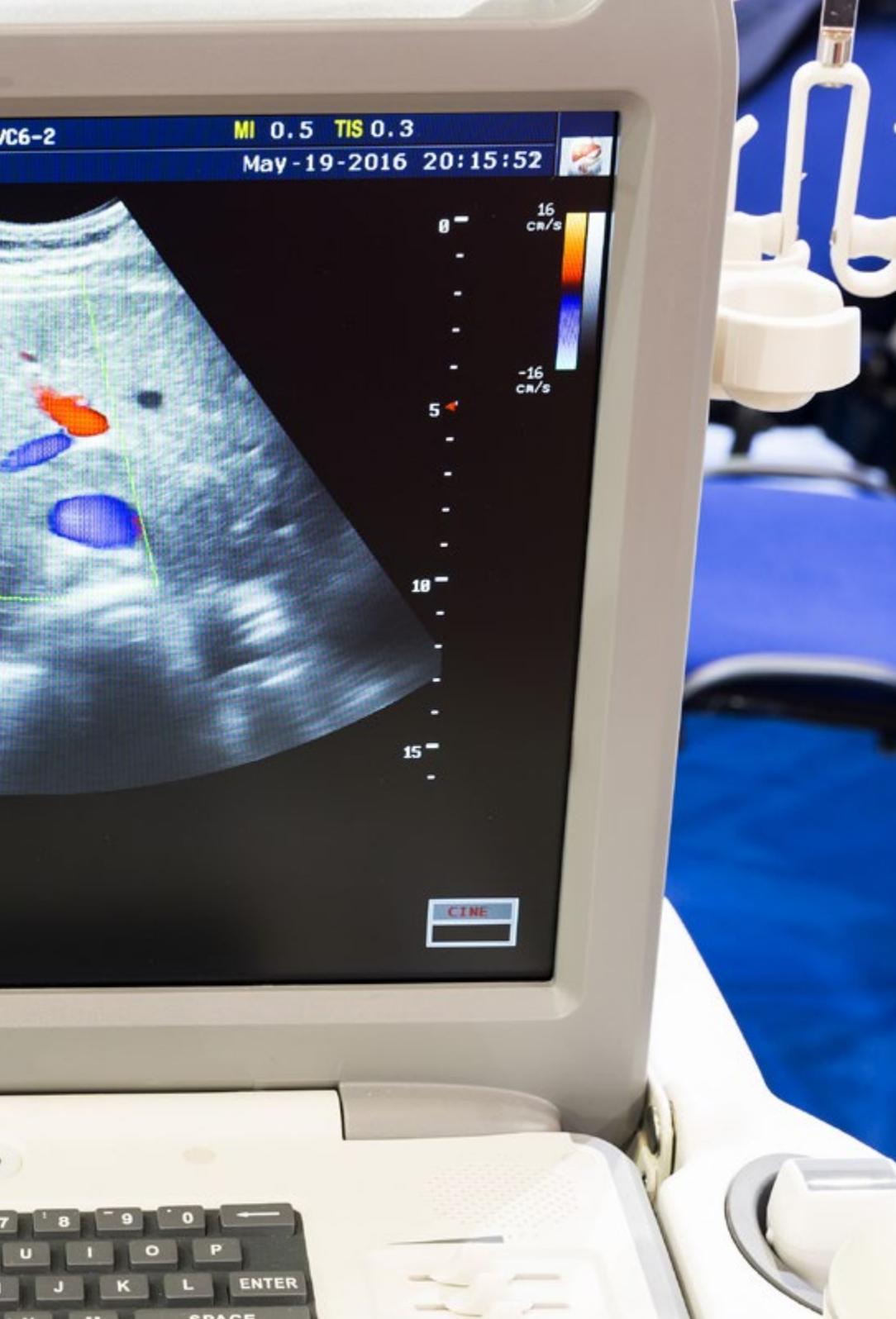
## General Objective

- Complete the educational curriculum by making physicians masters in the use of ultrasound for the management of emergency situations and critical patients, regardless of the environment in which they find themselves.



*Make the most of this opportunity and take the step to get up to date on the latest developments in the Ultrasound Approach to Major Syndromes"*





## Specific Objectives

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- ◆ Explain the use of ultrasounds in cardiac arrest
- ◆ Describe the use of ultrasound in cases of shock
- ◆ Explain the use of ultrasounds in respiratory failure
- ◆ Describe the use of ultrasound in cases of sepsis
- ◆ Explain the use of ultrasounds in abdominal pain
- ◆ Describe the use of ultrasound in trauma cases
- ◆ Explain the use of ultrasounds in strokes
- ◆ Explain the usefulness of ultrasound in resuscitation
- ◆ Describe usefulness of ultrasound after recovery of spontaneous circulation
- ◆ Analyze the prediction of the hemodynamic response to intravascular volume administration
- ◆ Take ultrasound assessment of pulmonary edema
- ◆ Explain the ultrasound search for sources of sepsis
- ◆ Explain the assessment of extravascular lung water
- ◆ Explain the hemodynamic assessment focused on trauma

03

# Course Management

This program includes in its teaching staff health professionals of recognized prestige, who belong to the field of emergency and critical care ultrasound, and who pour into this program the experience of their work.

In addition, renowned specialists, members of prestigious national and international scientific communities, are involved in designing and preparing the program.



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*Learn from leading professionals the latest advances in the Ultrasound Approach to Major Syndromes”*

## Management



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

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

## Professors

### Dr. Igeño Cano, José Carlos

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

### Dr. López Cuenca, Sonia

- ◆ Degree in Medicine and Surgery
- ◆ Specialist in Intensive Care Medicine.
- ◆ Attending Physician of Intensive Care Medicine and Major Burns Unit.
- ◆ Getafe University Hospital. Madrid
- ◆ Member of the Ecoclub of SOMIAMA.



# 04

# Structure and Content

The structure of the contents has been designed by a team of professionals knowledgeable about the implications of specialization in daily medical practice in ultrasound, aware of the relevance of the current importance of training to be able to act before the critical patient with quality teaching through new educational technologies.





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*This Postgraduate Certificate in Ultrasound Approach to Major Syndromes, contains the most complete and up-to-date scientific program on the market”*

## Module 1. Ultrasound Approach to Major Syndromes

- 1.1. Cardiac Arrest
  - 1.1.1. Cerebral Hemodynamics
  - 1.1.2. Brain Damage in Cardiac Arrest
  - 1.1.3. Usefulness of Ultrasound in Resuscitation
  - 1.1.4. Usefulness of Ultrasound After Recovery of Spontaneous Circulation
- 1.2. Shock
  - 1.2.1. Ventricular Filling Pressure
  - 1.2.2. Cardiac Output
  - 1.2.3. Prediction of the Hemodynamic Response to Intravascular Volume Administration
  - 1.2.4. Ultrasound Assessment of Pulmonary Edema
  - 1.2.5. Ultrasound Search for Sources of Sepsis
- 1.3. Respiratory Failure
  - 1.3.1. Acute Respiratory Failure: Diagnosis
  - 1.3.2. Abrupt Hypoxemia in Patients on Mechanical Ventilation
  - 1.3.3. Monitoring of Recruitment Maneuvers
  - 1.3.4. Assessment of Extravascular Lung Water



- 1.4. Acute Renal Failure.
  - 1.4.1. Hydronephrosis
  - 1.4.2. Lithiasis
  - 1.4.3. Acute Tubular Necrosis
  - 1.4.4. Doppler Ultrasound in Acute Renal Failure
  - 1.4.5. Bladder Ultrasound in Acute Renal Failure
- 1.5. Trauma
  - 1.5.1. FAST and E-FAST (Hemo and Pneumothorax)
  - 1.5.2. Ultrasound Assessment in Special Situations
  - 1.5.3. Hemodynamic Assessment Focused on Trauma
- 1.6. Stroke
  - 1.6.1. Justification
  - 1.6.2. Initial Appraisal
  - 1.6.3. Ultrasound Appraisal
  - 1.6.4. Ultrasound-Guided Management



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

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.



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*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, we use the Case Method

What should a professional do in a given situation? 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. Specialists learn better, faster, and more sustainably over time.

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



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.

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*Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method.*

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

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate 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.



## Relearning Methodology

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

*Professionals will learn through real cases and by resolving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.*



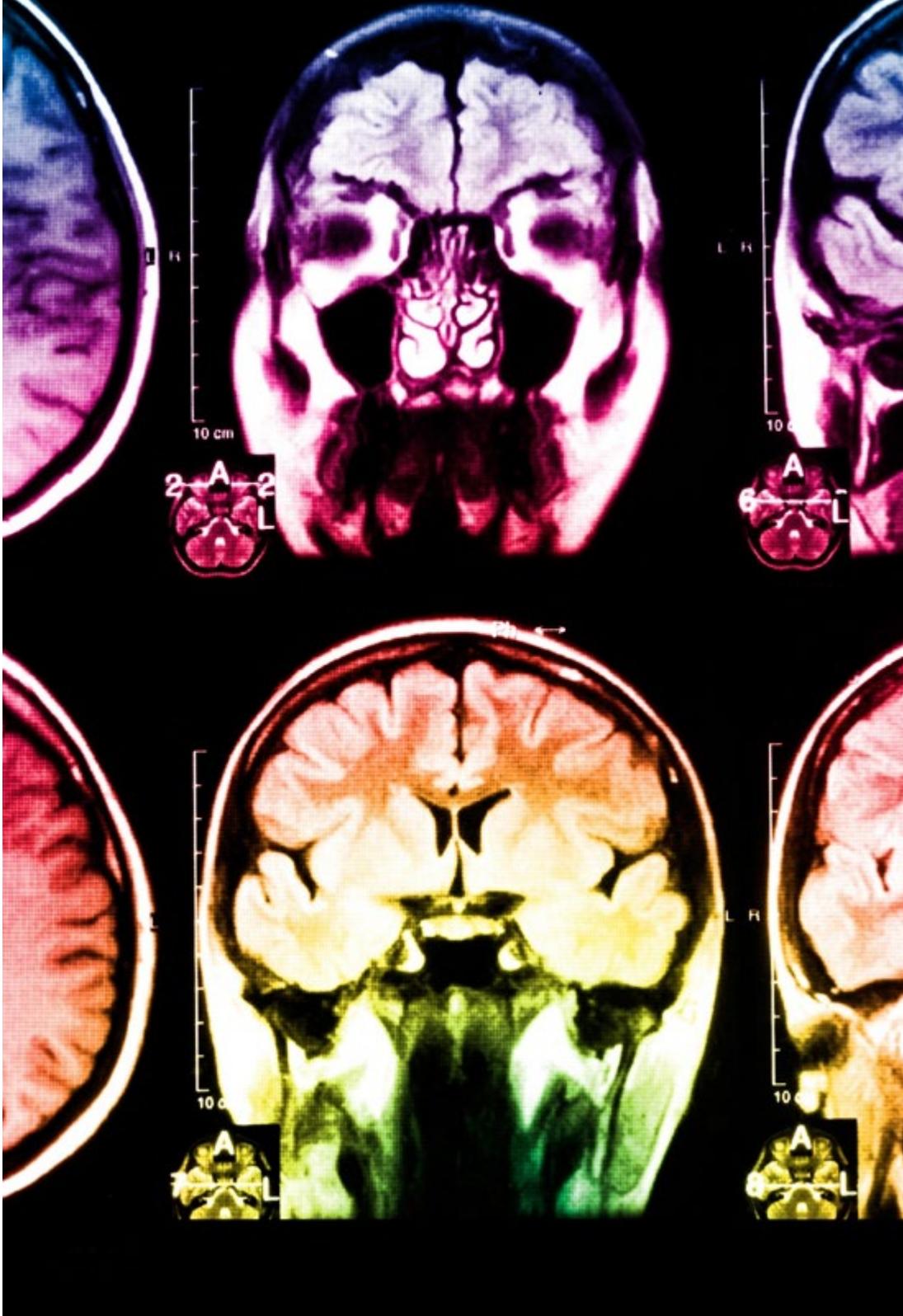
At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. 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 highly specific and precise.

These contents are then adapted in 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.



#### Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and 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 the videos as many times as you like.



#### 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.

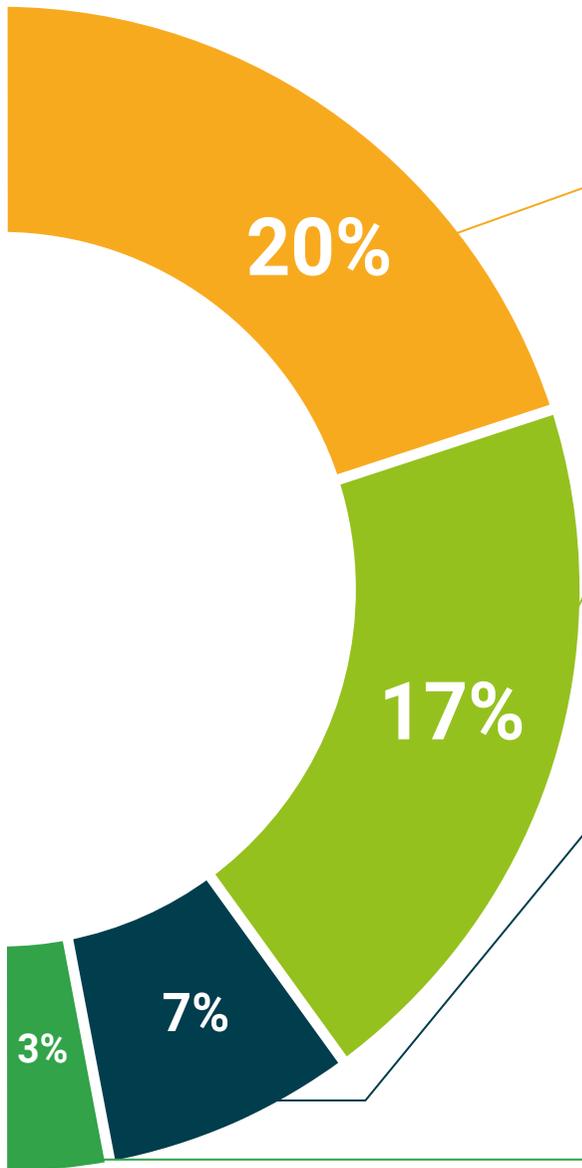
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### 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 on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



**Quick Action Guides**

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



# 06 Certificate

The Postgraduate Certificate in Ultrasound Approach to Major Syndromes guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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

This program will allow you to obtain your **Postgraduate Certificate in Ultrasound Approach to Major Syndromes** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

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

Title: **Postgraduate Certificate in Ultrasound Approach to Major Syndromes**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



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

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



## Postgraduate Certificate

Ultrasound Approach  
to Major Syndromes

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