

# Postgraduate Certificate

Clinical Ultrasound in Accidents  
and Emergencies in Primary Care



## Postgraduate Certificate

### Clinical Ultrasound in Accidents and Emergencies in Primary Care

Course Modality: Online

Duration: 6 weeks

Certificate: TECH Technological University

6 ECTS Credits

Hours 150 hours.

Website: [www.techtitute.com/medicine/postgraduate-certificate/clinical-ultrasound-accidents-emergencies-primary-care](http://www.techtitute.com/medicine/postgraduate-certificate/clinical-ultrasound-accidents-emergencies-primary-care)

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# 01

# Introduction

Ultrasound has multiple uses in emergency departments. In the vast majority of cases, the medical emergency rooms do not have an expert radiologist who can attend to all patients. Therefore, it is essential that physicians are trained in this specialty and have sufficient skills to perform an ultrasound approach.

With the Postgraduate Certificate in Clinical Ultrasound in Accidents and Emergencies in Primary Care you will update your knowledge in the subject and you will obtain the necessary skills to incorporate the ultrasound in your daily medical practice.





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*Update your knowledge and get your degree in Clinical Ultrasound in Accidents and Emergencies in Primary Care from the world's largest online university”*

Emergency ultrasound has the ability to improve and expedite patient care. It is often used to detect, identify or as a guide for respiratory failure, shock and cardiac arrest, polytrauma, sepsis or genitourinary emergencies, among others.

The use of clinical ultrasound in primary care facilitates the work of the health professional, allowing him to develop a thorough diagnosis of the pathology presented by the patient for subsequent treatment.

With this Postgraduate Certificate you will have the opportunity to take a teaching program that brings together the most advanced and in-depth knowledge of Clinical Ultrasound in Accidents and Emergencies in Primary Care, where a group of teachers of high scientific rigor and extensive international experience offers you the most complete and updated information on the use of ultrasound as a complement to the physical examination in primary care.

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



*This course contains a didactic program designed by experts, which positions it as a product of the highest scientific rigor at international level"*

This **Postgraduate Certificate in Clinical Ultrasound in Accidents and Emergencies in Primary Care** contains the most complete and up-to-date scientific program on the market. The most important features of the course are:

- ♦ Development of numerous clinical cases presented by experts in ultrasound
- ♦ The graphic, schematic, and eminently practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ New diagnostic-therapeutic developments on evaluation, diagnosis, and intervention in problems or disorders that can be addressed with ultrasound.
- ♦ It contains practical exercises where the self-evaluation process can be carried out to improve learning
- ♦ Algorithm-based interactive learning system for decision-making in the presented clinical situations
- ♦ Special emphasis on evidence-based medicine and research methodologies in ultrasound processes
- ♦ Content that is accessible from any fixed or portable device with an Internet connection
- ♦ All of this will be complemented by theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments

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*You will have distinguished specialists in the field, who will guide and advise you throughout the learning process”*

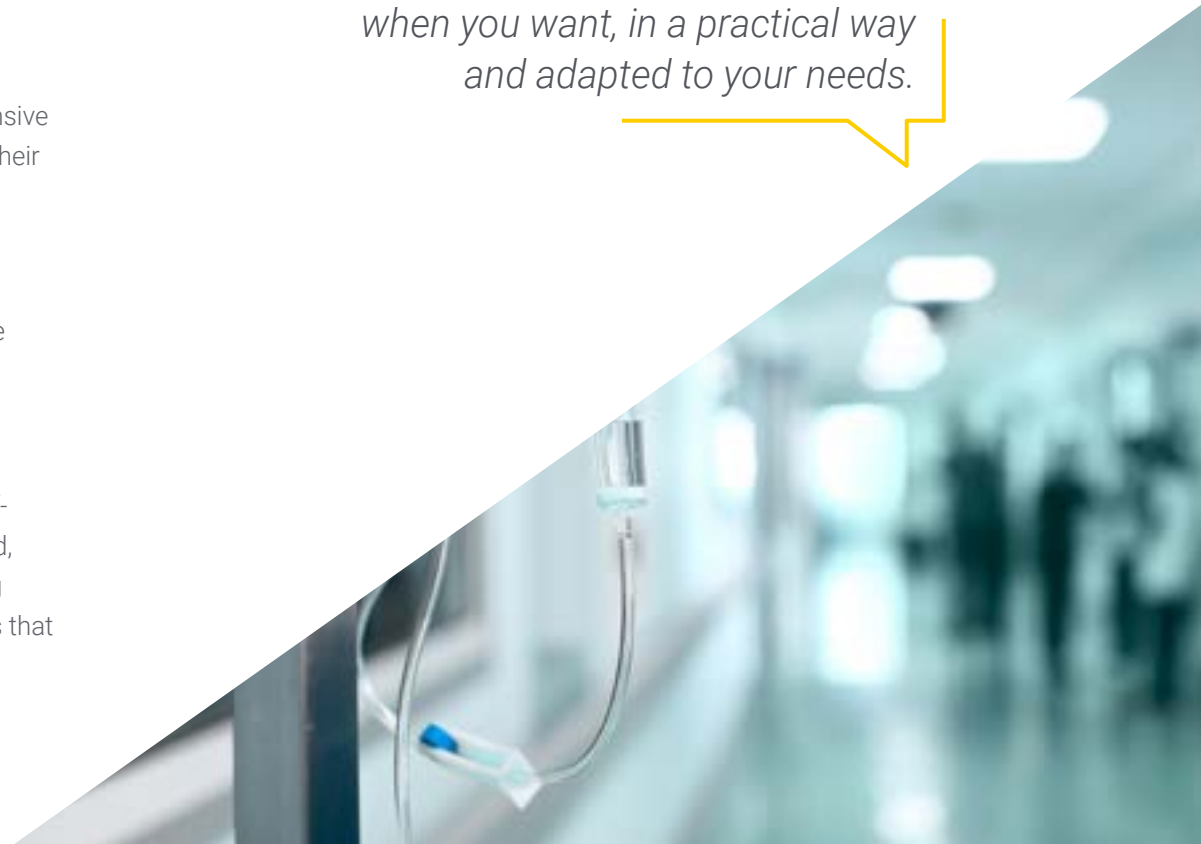
Its teaching staff is made up of prestigious and renowned professionals, with extensive experience in healthcare, teaching, and research in various countries, contributing their extensive professional to this Postgraduate Certificate.

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

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

*Thanks to the e-learning methodology, on which the this program is based, you will assimilate more quickly and for a longer period of time.*

*This 100% online course will allow you to train where and when you want, in a practical way and adapted to your needs.*



# 02 Objectives

The main objective of the course is the acquisition of the most updated and innovative scientific knowledge in the diagnostic area, which will allow you to develop the skills that will turn your daily clinical practice into a bastion of the standards of the best available scientific evidence, with a critical, innovative, multidisciplinary and integrative sense.





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*Our goal is yours: to provide you with the best online updating and specialization in other utilities of clinical ultrasound in primary care”*



## General Objectives

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





## Specific Objectives

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

03

# Course Management

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





*You will have a virtual classroom, where you will find real cases of prestigious health professionals, which will help you develop your skills with the ultrasound"*

## Management



### Dr. Fumadó Qeral, Josep

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



### Dr. Pérez Morales, Luis Miguel

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

## Professors

### Dr. Arancibia Zemelman, Germán

- ♦ Radiology Department Specialis at Clínica Meds. Santiago de Chile (Chile)

### Dr. Argüeso García, Mónica

- ♦ Intensive Care Medicine Department. Gran Canaria Maternity Complex. Las Palmas de Gran Canaria (Canary Islands).

### Dr. Barceló Galíndez, Juan Pablo

- ♦ Specialist in Occupational Medicine and medical sonographer at Mutualia. Bilbao

### Dr. Cabrera González, Antonio José

- ♦ Family Physician. Tamaraceite Health Center. Las Palmas de Gran Canaria (Canary Islands)

### Dr. Corcoll Reixach, Josep

- ♦ Family Physician. Tramuntana Health Center (Mallorca, Balearic Islands).

### Dr. De Varona Frolov, Serguei

- ♦ Angiology and Vascular Surgery Specialist. General University Hospital of Gran Canaria Dr. Negrín. Las Palmas de Gran Canaria (Canary Islands).

### Dr. Donaire Hoyas, Daniel

- ♦ Specialist in Orthopedic Surgery and Traumatology. Poniente Hospital. El Ejido, Almería.

### Dr. Fabián Feroso, Antonio

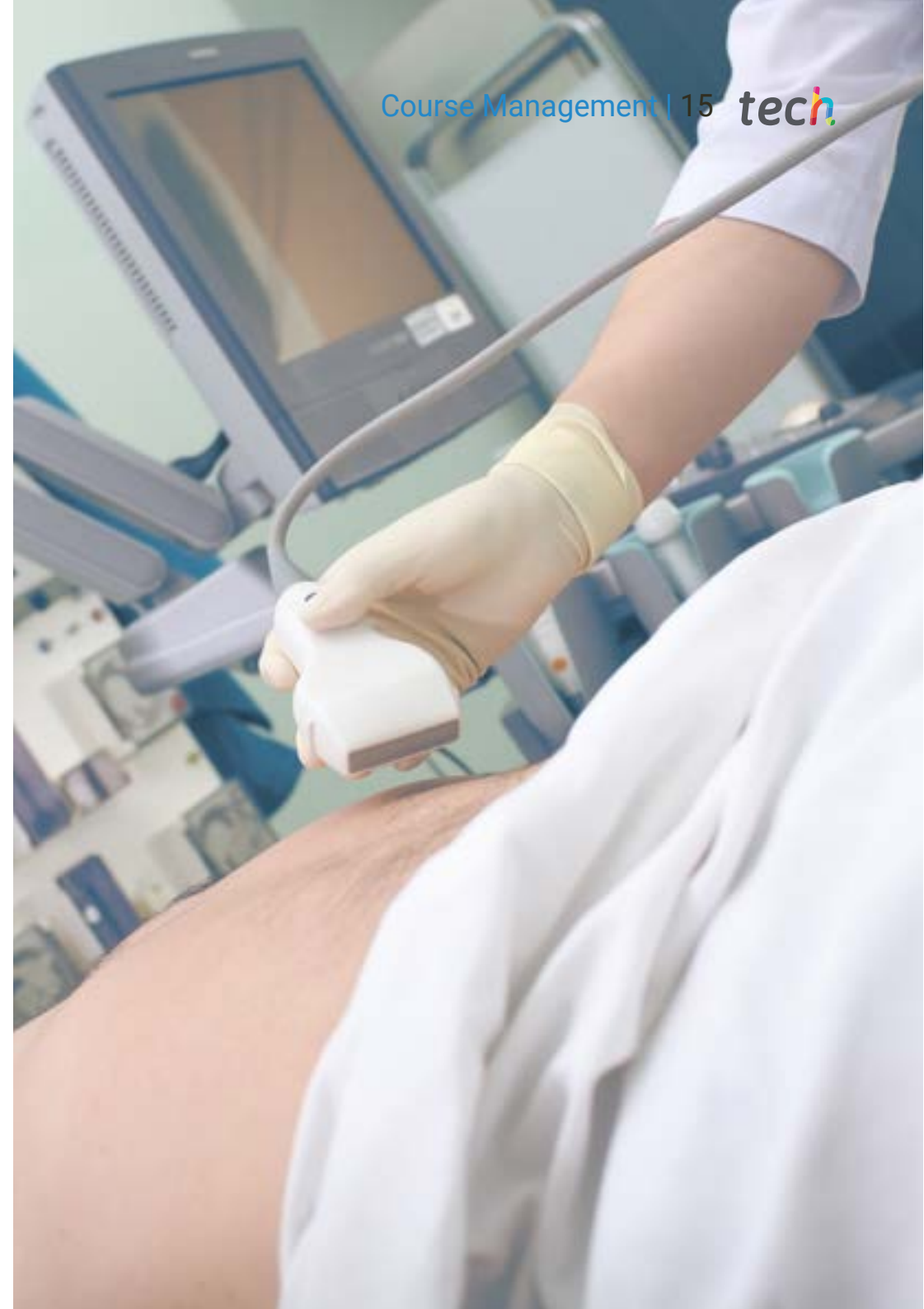
- ♦ Global Clinical Insights Leader Point of Care. General Electric Healthcare. Madrid.

### Dr. Gálvez Gómez, Francisco Javier

- ♦ Ultrasound Portfolio Solutions Manager España. SIEMENS Healthcare. Madrid.

### Dr. García García, Nicasio

- ♦ Family Physician (Schamann Health Center).



**Dr. Herrera Carcedo, Carmelo**

- ♦ Family Physician. Briviesca Health Center (Burgos).

**Dr. Herrero Hernández, Raquel**

- ♦ Specialist in the Intensive Care and Major Burns Unit Getafe University Hospital. Madrid.

**Dr. Igeño Cano, José Carlos**

- ♦ Head of the Emergency and Intensive Care Unit. San Juan de Dios Hospital. Córdoba

**Dr. León Ledesma, Raquel**

- ♦ Specialist in General and Digestive System Surgery and Obstetrics and Gynecology. Getafe University Hospital. Madrid.

**Dr. López Cuenca, Sonia**

- ♦ Family Physician and Assistant in the Intensive Care and Major Burns Unit at Getafe Hospital (Madrid).

**Dr. López Rodríguez, Lucía**

- ♦ Specialist in the Intensive Care and Major Burns Unit Getafe University Hospital. Madrid.

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

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

**Dr. Moreno Valdés, Javier**

- ♦ Business Manager Ultrasound. Canon (Toshiba) Medical Systems. Madrid.

**Dr. Núñez Reiz, Antonio**

- ♦ Intensive Care Medicine Department Specialist. San Carlos University Hospital. Madrid.

**Dr. Ortigosa Solorzano, Esperanza**

- ♦ Specialist in Anesthesiology, Resuscitation, and Pain Management. Getafe University Hospital. Madrid.

**Professor. Dr. Santos Sánchez, José Ángel**

- ♦ Specialist in the Radiology Department. Salamanca University Hospital. Salamanca

**Dr. Segura Blázquez, José María**

- ♦ Family Physician. Canalejas Health Center. Las Palmas de Gran Canaria (Canary Islands).

**Dr. Wagüemert Pérez, Aurelio**

- ♦ Specialist in Pulmonology. San Juan de Dios Hospital. Santa Cruz de Tenerife (Canary Islands).





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*A unique, key, and decisive Training experience to boost your professional development”*

05

# Structure and Content

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



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*With this program you will be able to detect and intervene in those pathologies that can be diagnosed through ultrasound”*

## Module 1. Clinical Ultrasound in Emergencies

- 1.1. Ultrasound in Respiratory Failure
  - 1.1.1. Spontaneous Pneumothorax
  - 1.1.2. Bronchospasm
  - 1.1.3. Pneumonia
  - 1.1.4. Pleural Effusion.
  - 1.1.5. Heart Failure
- 1.2. Ultrasound in Shock and Cardiac Arrest
  - 1.2.1. Hypovolemic Shock
  - 1.2.2. Obstructive Shock
  - 1.2.3. Cardiogenic Shock
  - 1.2.4. Distributive Shock
  - 1.2.5. Cardiac Arrest.
- 1.3. Ultrasound in Polytrauma: Eco-FAST
  - 1.3.1. Pericardial Effusion
  - 1.3.2. Hemothorax and Pneumothorax
  - 1.3.3. Hepatorenal or Perihepatic Effusion
  - 1.3.4. Splenorenal or Perisplenic Effusion
  - 1.3.5. Perivesical Effusion.
  - 1.3.6. Post-Traumatic Aortic Dissection
  - 1.3.7. Musculoskeletal Injuries





- 1.4. Genitourinary Emergencies
  - 1.4.1. Obstructive Uropathy
  - 1.4.2. Uterine Emergencies
  - 1.4.3. Ovarian Emergencies
  - 1.4.4. Bladder Emergencies
  - 1.4.5. Prostatic Emergencies. Scrotal Emergencies
- 1.5. Acute Abdomen.
  - 1.5.1. Cholecystitis
  - 1.5.2. Pancreatitis.
  - 1.5.3. Mesenteric Ischemia
  - 1.5.4. Appendicitis
  - 1.5.5. Perforation of the Hollow Viscus
- 1.6. Ultrasound in Sepsis
  - 1.6.1. Hemodynamic Diagnosis
  - 1.6.2. Source Detection
  - 1.6.3. Handling of Liquids

05

# Methodology

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

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



“

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

## At TECH we use the Case Method

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

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



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



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

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

1. Students who follow this method not only grasp concepts, but also develop their mental capacity by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



## Re-Learning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Re-learning.

Our University is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, which represent a real revolution with respect to simply studying and analyzing cases.



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

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

With this methodology we have trained more than 250,000 physicians with unprecedented success, in all clinical specialties regardless of the surgical load. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*Re-learning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.*

In our program, learning is not a linear process, but rather a spiral (we learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by our learning system is 8.01, according to the highest international standards.



In this program you will have access to the best educational material, prepared with you in mind:



#### Study Material

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



#### Latest Techniques and Procedures on Video

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



#### Interactive Summaries

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

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



#### Additional Reading

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





#### Expert-Led Case Studies and Case Analysis

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



#### Testing & Re-testing

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



#### Classes

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

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



#### Quick Action Guides

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



06

# Certificate

The Postgraduate Certificate in Clinical Ultrasound in Accidents and Emergencies in Primary Care Iguarantees you, in addition to the most rigorous and up-to-date training, access to Certificate issued by TECH Technological University.



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*Successfully complete this training and receive your diploma without the hassle of travel or paperwork”*

This **Postgraduate Certificate in Clinical Ultrasound in Accidents and Emergencies in Primary Care** contains the most complete and up-to-date scientific program on the market.

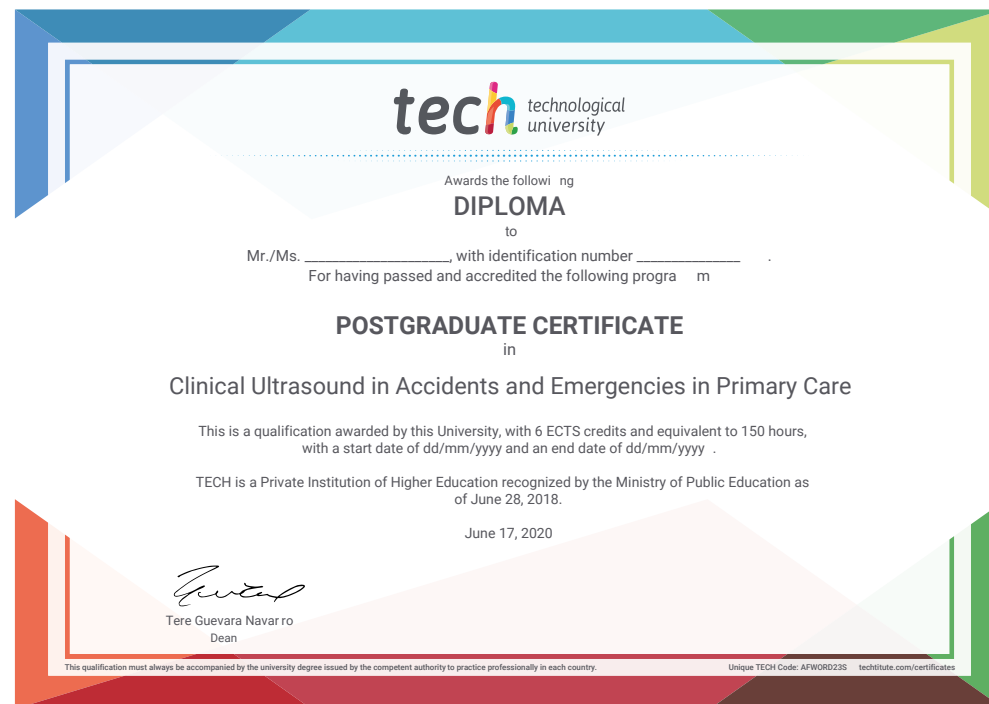
After students have passed the assessments, they will receive by certified mail their corresponding **Postgraduate Certificate Certificate** issued by TECH Technological University.

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

**Title: Postgraduate Certificate in Clinical Ultrasound in Accidents and Emergencies in Primary Care**

ECTS: 6

Official Number of Hours: **150**



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



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



## Postgraduate Certificate

Clinical Ultrasound  
in Accidents and  
Emergencies in Primary  
Care

Course Modality: Online

Duration: 6 weeks

Certificate: TECH Technological University

6 ECTS Credits

Hours 150 hours.

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Clinical Ultrasound in Accidents  
and Emergencies in Primary Care