# Postgraduate Certificate

## Clinical Musculoskeletal Ultrasound

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# Postgraduate Certificate

## Clinical Musculoskeletal Ultrasound

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

Website: www.techtitute.com/medicine/us/postgraduate-certificate/postgraduate-certificate-clinical-musculoskeletal-ultrasound

# Index

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# 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 radio diagnostic services to now being implemented in all healthcare environments.

*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 Ultrasonography increases the possibility of diagnosing and treating patients in an emergency situation or those who need critical care. It is becoming an ever increasingly popular and valuable tool for aiding diagnostic and therapeutic interventions.

Its advantages include portability, accuracy, real-time visualization, reproducibility and efficiency (cost/effectiveness). Its usefulness has been demonstrated in 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 Clinical Musculoskeletal Ultrasound** contains the most complete and updated scientific program on the market. The most important features of the program include:

- Clinical cases presented by experts in ultrasound imaging. 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.
- Novelties on procedures in Clinical Musculoskeletal Ultrasound
- Algorithm-based interactive learning system for decision-making in the presented clinical situations.
- Special emphasis on test-based medicine and research methodologies in the use of ultrasound in emergencies and critical care.
- All 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.

*Expand your knowledge through the Postgraduate Certificate in Clinical Musculoskeletal Ultrasound, in a practical way and adapted to your needs”*

*This course may be the best investment you can make when choosing a refresher program for two reasons: in addition to updating your knowledge on Clinical Musculoskeletal Ultrasound, you will obtain a postgraduate certificate from TECH Global University"*

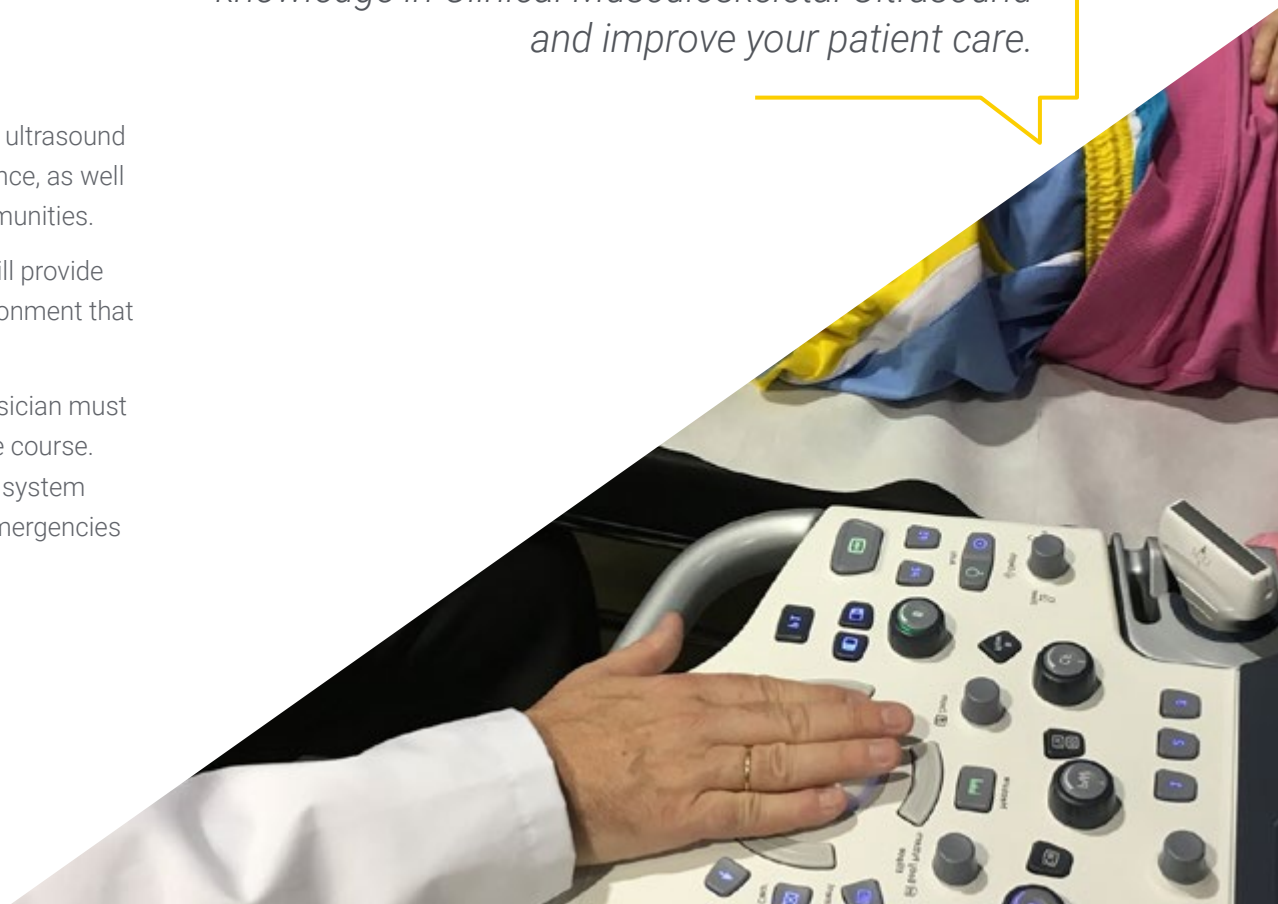
*The course includes real clinical cases and exercises to bring the development of the course closer to the doctor's clinical practice.*

*Make the most of the opportunity to update your knowledge in Clinical Musculoskeletal Ultrasound and improve your patient care.*

Forming part of the teaching staff is a group of professionals in the world of ultrasound in emergencies and critical care who bring to this training their work experience, as well as a group of renowned specialists, recognised by esteemed scientific communities.

The multimedia content developed with the latest educational technology will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive training program to train in real situations.

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



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# Objectives

The program's primary objective is focused on theoretical and practical learning, so that the medical professional is able to master Clinical Musculoskeletal Ultrasound in a practical and rigorous manner.

*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

- The main goal of this course is to complete the training itinerary, turning physicians into masters in the use of ultrasound for the management of emergency situations and critical patients, regardless of the environment in which they find themselves.

## Specific Objectives

- Explain the anatomy of the musculoskeletal system.
- Describe the technical requirements of musculoskeletal ultrasounds.
- Explain the examination technique for musculoskeletal ultrasounds.
- Define the sonoanatomy of the locomotor system.
- Explain the principles of ultrasounds of the most common acute knee injuries.
- Explain the principles of ultrasounds of the most common acute hand injuries.
- Explain the principles of ultrasounds of the most common acute arm injuries.
- Explain the principles of ultrasounds of the most common acute shoulder injuries.
- Explain the principles of ultrasounds of the most common acute hip injuries.
- Explain the principles of ultrasounds of the most common acute wrist injuries.
- Explain the principles of ultrasounds of the most common acute elbow injuries.
- Explain the principles of ultrasounds of the most common acute foot injuries.
- Describe the usefulness of ultrasound in arthritis
- Describe the use of ultrasound in tendon pathologies.
- Describe the usefulness of ultrasound in soft tissue damage.

*Seize the opportunity and take the step to get up to date on the latest developments in Clinical Musculoskeletal Ultrasound"*

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# Course Management

This program includes highly regarded health professionals in the field of ultrasound in emergencies and critical care in its teaching staff, who bring the experience of their work to this training.

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

*Learn the latest advances in Clinical Musculoskeletal Ultrasound from leading professionals"*

## 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

**Álvarez González, Manuel**

- Attending Physician of Intensive Care Medicine at the San Carlos Clinical University Hospital in Madrid
- Founding Member of the Ecoclub of SOMIAMA.

**De la Calle Reviriego, Braulio**

- Head of the Department of Intensive care medicine and Transplants Coordinator at the Gregorio Marañón General University Hospital in Madrid
- Collaborating Professor at the Complutense University of Madrid.
- Trainer in Brain Ultrasound of the National Transplant Organization.

**Yus Teruel, Santiago**

- Attending Physician in Intensive Medicine. La Paz- Carlos III University Hospital. Madrid
- Member of the Ecoclub of SOMIAMA.

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# Structure and Content

The structure of the contents has been designed by a team of professionals who recognise the implications of training in the daily medical praxis in ultrasound, aware of the relevance of current training to treat the patient, critical to quality teaching using new educational technologies.

*This Postgraduate Certificate in Clinical Musculoskeletal Ultrasound contains the most complete and updated scientific program on the market"*

## **Module 1.** Clinical Musculoskeletal Ultrasound

1.1. Anatomy Recap.
- 1.1.1. Bone Cortex.
- 1.1.2. Ligaments.
- 1.1.3. Tendons.
- 1.1.4. Muscles.

1.2. Technical Requirements.
- 1.2.1. Ultrasound Scanners and Probes.
- 1.2.2. Curve Analysis.
- 1.2.3. Image-Color Media.
- 1.2.4. Echo Contrasts.

1.3. Examination Technique.
- 1.3.1. Positioning:
- 1.3.2. Insonation. Examining Technique.
- 1.3.3. Study of Normal Curves and Speeds.

1.4. Sonoanatomy of the Locomotor System: I. Upper Extremities.
- 1.4.1. Shoulder.
- 1.4.2. Arm.
- 1.4.3. Elbow.
- 1.4.4. Wrist.
- 1.4.5. Hand.

1.5. Sonoanatomy of the Locomotor System: II. Lower Extremities.
- 1.5.1. Knee.
- 1.5.2. Thigh.
- 1.5.3. Hip.
- 1.5.4. Foot.
- 1.5.5. Ankle.

1.6. Ultrasound in the Most Frequent Acute Locomotor System Injuries.
- 1.6.1. Tendon Pathologies.
- 1.6.2. Arthritis.
- 1.6.3. Soft Tissue Damage.

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

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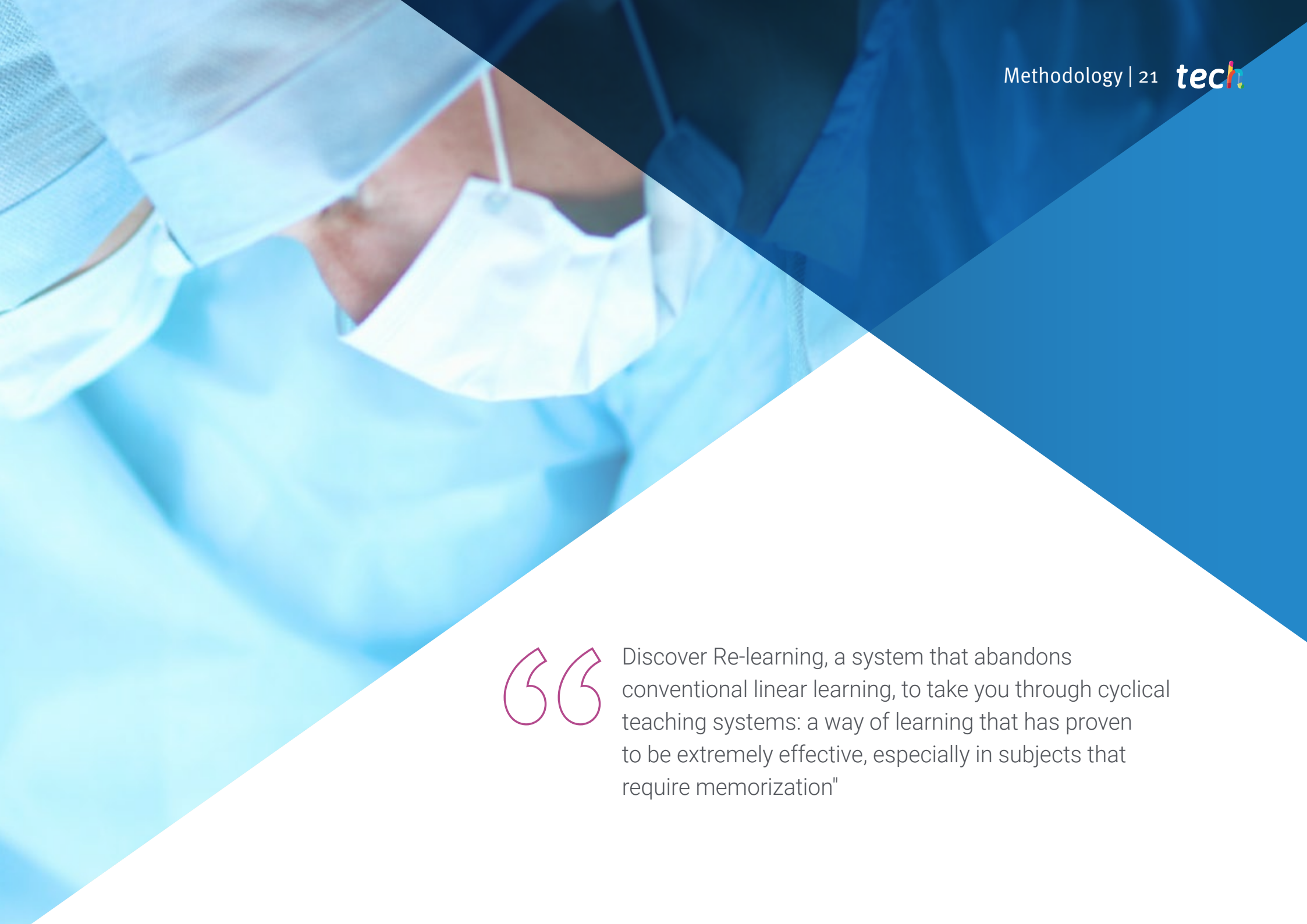
# Methodology

This training program provides you with a different way of learning. Our methodology follows a cyclical learning process: **Re-learning.**
This teaching system is used in the most prestigious medical schools in the world, and major publications have considered it to be one of the most effective, such as the **New England Journal of Medicine.**



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 an abundance of 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. 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 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.

*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:**

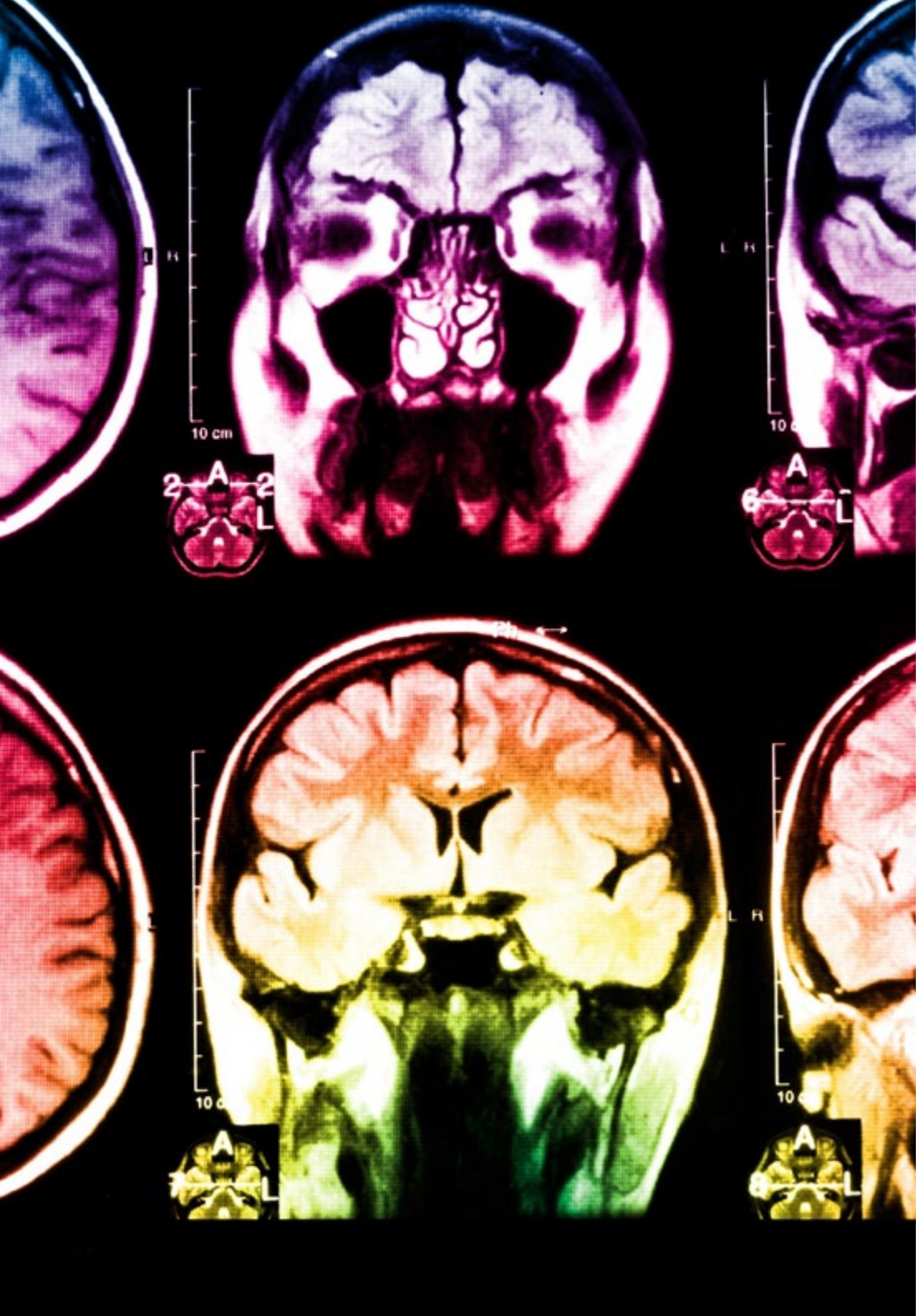
1. Students who follow this method not only grasp concepts, but also develop their mental capacity by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts 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 really 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.*

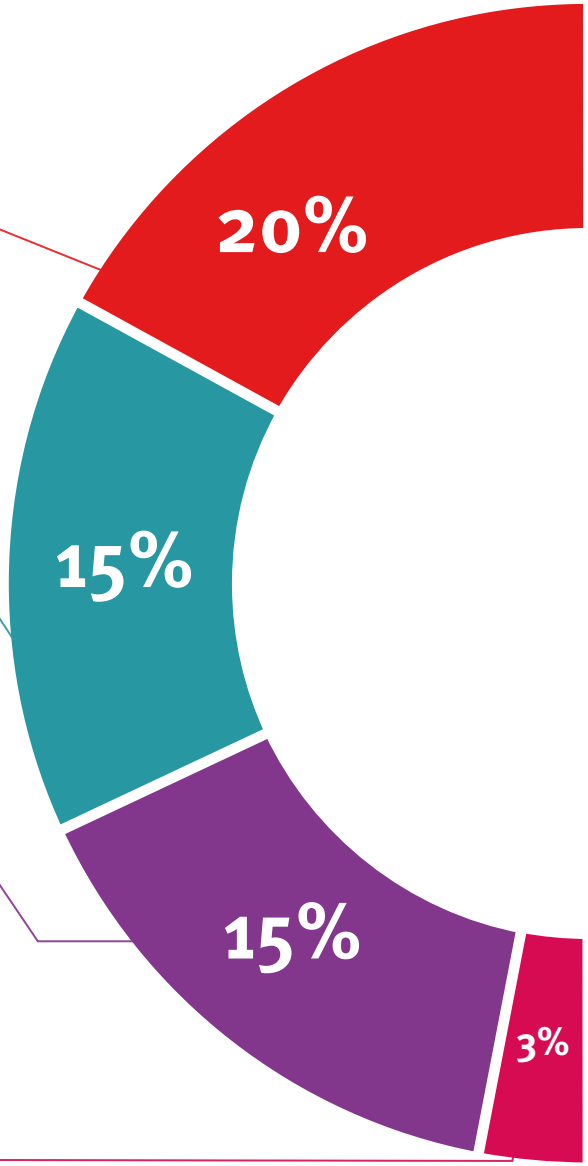
### Interactive Summaries

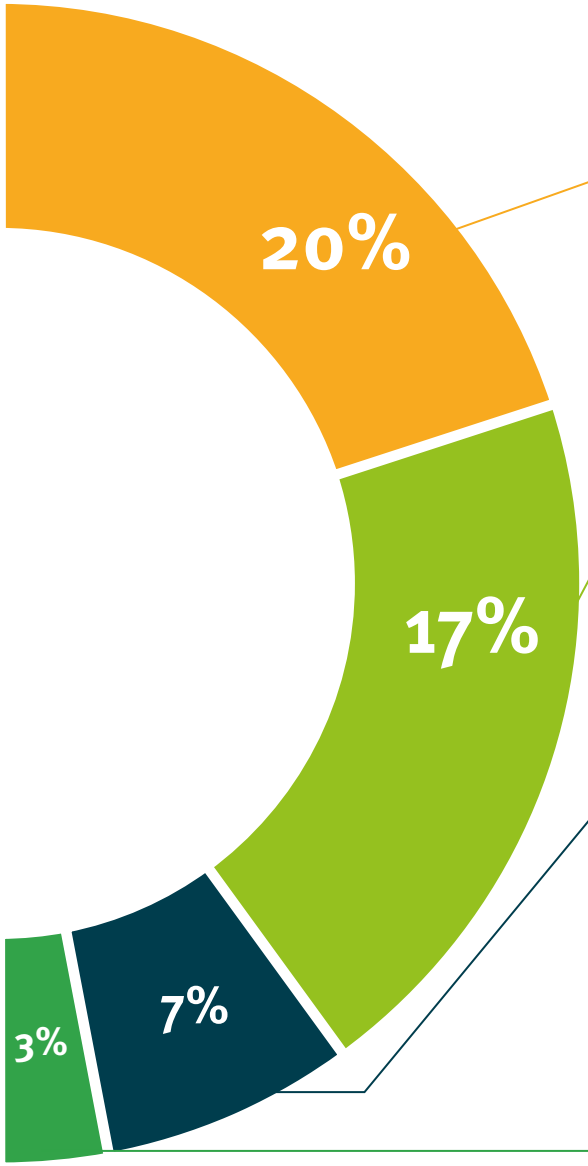
*We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.*

*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 difficult future 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.

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# Certificate

The Postgraduate Certificate in Clinical Musculoskeletal Ultrasound guarantees you, in addition to the most rigorous and updated training, access to a Postgraduate Certificate issued by TECH Global University.

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

This program will allow you to obtain your **Postgraduate Certificate in Clinical Musculoskeletal Ultrasound** 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 Clinical Musculoskeletal Ultrasound**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**


tech global university

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

**Postgraduate Certificate in Clinical Musculoskeletal Ultrasound**

This is a program of 180 hours of duration equivalent to 6 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

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

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

Dr. Pedro Navarro Illana
Rector

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country.

Unique TECH Code: AFWORD23S techtitute.com/certificates

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

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