

Postgraduate Certificate

Non-Invasive Vascular Imaging





Postgraduate Certificate Non-Invasive Vascular Imaging

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

Website: www.techtitute.com/us/medicine/postgraduate-certificate/non-invasive-vascular-imaging

Index

01

Introduction

p. 4

02

Objectives

p. 8

03

Course Management

p. 12

04

Structure and Content

p. 16

05

Methodology

p. 20

06

Certificate

p. 28

01

Introduction

Reducing invasive clinical procedures, whether for the diagnosis or treatment of different pathologies, has become one of the premises of healthcare in the 21st century. In Vascular Medicine, for example, this premise is latent with the inclusion of increasingly advanced diagnostic technologies, such as Magnetic Resonance Imaging or Computed Tomography Angiography. Therefore, in order to provide specialists with an exhaustive academic analysis of all the potentialities of these tools, TECH has created this very complete program. Its syllabus includes the most disruptive trends such as Vascular Ultrasound and techniques for the reconstruction of visualizations through data quantification. All this 100% online and with a teaching staff made up of true experts.



“

With TECH's exclusive Relearning system you will get a comprehensive update on Non-invasive Vascular Imaging technologies and their diagnostic and therapeutic applications"

The correct interpretation of vascular anatomy is essential to be able to plan therapeutic procedures or make clinical decisions in the most accurate way. The accuracy of the data obtained by different imaging techniques is fundamental in this regard and, in order to reach the highest standards in this sense, medical sciences are continuously innovating. Therefore, different disruptive and non-invasive mechanisms have appeared that enable the effective diagnosis of these pathologies. However, in the majority of cases, Angiology specialists do not have the most updated knowledge about the latest technologies within their reach.

That is why TECH offers this Postgraduate Certificate where graduates will delve into resources such as Vascular Ultrasound and the most successful exploration protocols for these equipments. At the same time, they will analyze the gray scales that are related to these and will delve into the interpretation of blood flows in real time. On the other hand, they will address potential improvements in hardware and software to optimize image quality. Also on the agenda of the university program will be different techniques for data reconstruction and visualization. It will also include the applications of Computed Tomography and Magnetic Resonance Imaging in this field of health.

In order to consolidate the knowledge that this program brings together, TECH will implement its disruptive Relearning methodology. In this way, students will assimilate complex concepts without having to memorize them in the traditional way, also reducing the time invested in updating them. On the other hand, they will be able to plan the updating of their competencies in correspondence with their schedules and work obligations. In this way, through the 6 weeks of this academic itinerary, they can choose the ideal time or place to approach the contents. They will also have access to complementary and multimedia materials such as explanatory videos or interactive summaries.

This **Postgraduate Certificate in Non-Invasive Vascular Imaging** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ The development of case studies presented by experts in Angiology and Vascular Surgery
- ♦ The graphic, schematic and eminently practical contents with which it is conceived gather scientific and practical information on those disciplines that are indispensable for professional practice
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning
- ♦ Its special emphasis on innovative methodologies
- ♦ 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



Your clinical practice will experience a significant boost thanks to the approach you will take with Vascular Ultrasound, due to its ability to visualize vascular structures and blood flows in real time"

“

You will not have to worry about tight schedules or continuous evaluation timetables: update yourself on the contents of this program at your own pace”

The program's teaching staff includes professionals from the sector who contribute their work experience to this specializing 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 immersive education programmed to learn in real situations.

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

You will acquire in-depth knowledge on the development of CT Angiography with TECH, the best digital university in the world according to Forbes.

To complete this program you only need a mobile device with Internet connection: you have at your fingertips all the advantages of a 100% online update.



02 Objectives

This TECH Global University program has as a central premise to provide a detailed description of the latest Non-Invasive Vascular Imaging tools for angiologists. From the analysis of these tools and their different diagnostic applications, graduates will be able to broaden their clinical practice and develop personalized therapeutic strategies according to the needs of each patient. In addition, over 6 intensive weeks, professionals will update their theoretical knowledge and practical skills without having to leave their work responsibilities thanks to its convenient 100% online methodology.



“

With this TECH program you will compare the advantages and disadvantages of Non-Invasive Vascular Imaging techniques to address specific clinical situations such as Peripheral Artery Disease”



General Objectives

- ◆ Develop the technical skills necessary to accurately perform and analyze angiographic studies
- ◆ Promote an appreciation of the importance of multidisciplinary teamwork in the interpretation and management of vascular angiographic results
- ◆ Acquire skills to apply techniques such as angioplasty, stent placement, and other minimally invasive procedures
- ◆ Determine the procedures and protocols for performing and interpreting computed tomography angiography (CTA) in the context of vascular interventionism



You will delve into the quantitative and qualitative analysis of vascular images to obtain accurate diagnoses and personalize the treatment of your patients"





Specific Objectives

- ◆ Analyze the physical principles and technology behind Doppler ultrasound as a tool for the evaluation of vascular flow and structure
- ◆ Identify the characteristics and limitations of magnetic resonance angiography (MRA) in the visualization of vascular anatomy and its usefulness in the diagnosis of vascular pathologies
- ◆ Compare the advantages and disadvantages of each noninvasive vascular imaging modality in specific clinical situations, such as Peripheral Artery Disease, Aneurysms, and Vascular Malformations
- ◆ Determine the clinical indications and benefits of each imaging modality in diagnosis, follow-up and treatment planning in vascular diseases

03

Course Management

Within the healthcare framework, TECH has established itself as an international academic benchmark thanks to its comprehensive programs that allow for the holistic updating of professionals. At the same time, these study plans are shaped by medical specialists with extensive experience. In the case of this program, the teaching staff includes angiologists and vascular surgeons of high prestige for the excellence of their procedures and the use of the most advanced tools in their interventions. With the guidelines they have established in this university program, graduates are able to broaden their competencies in a comprehensive and disruptive way.





“

TECH has a teaching staff of excellence composed renowned and experienced angiologists and vascular surgeons”

Management



Dr. Del Río Solá, María Lourdes

- ♦ Chief from the Vascular Angiology and Surgery Service at the Valladolid University Clinical Hospital
- ♦ Specialist in Angiology and Vascular Surgery
- ♦ European Board in Vascular Surger
- ♦ Academic Correspondent of the Royal Academy of Medicine and Surgery
- ♦ Full Professor at the European University Miguel de Cervantes
- ♦ Associate Professor in Health Sciences at the University of Valladolid

Professors

Dr. González Ruíz, Aleyna

- ♦ Head of the Angiology Area at Clinext (Extremities Clinic)
- ♦ Specialist Physician in Angiology and Vascular Surgery
- ♦ Bachelor of Medicine, General Surgery and Midwife by the Autonomous University of Chiapas
- ♦ Specialty in Angiology and Vascular and Endovascular Surgery at Hospital Antonio
- ♦ Antonio Fraga Mouret Specialties
- ♦ Postgraduate in Doppler Ultrasound, ANÁHUAC University
- ♦ Postgraduate in Integral Angiology, ANÁHUAC University
- ♦ Postgraduate in Endovascular Surgery, ANÁHUAC University
- ♦ Member of: Mexican Society of Angiology and Vascular and Endovascular Surgery

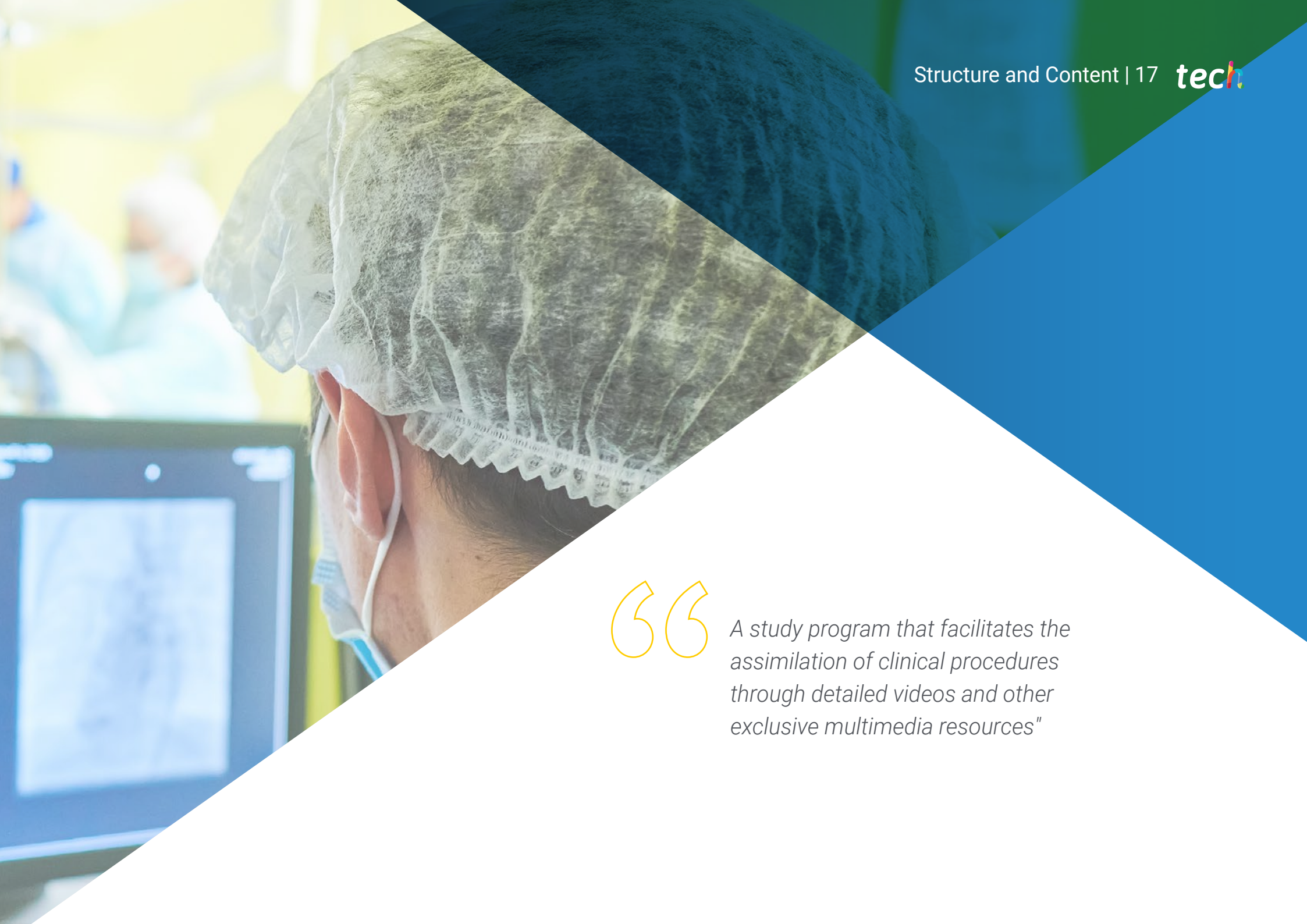


04

Structure and Content

The syllabus of the Postgraduate Certificate delves into the essential technologies and procedures for the diagnosis and management of vascular pathologies, facilitating safer and more effective procedures without resorting to invasive methods. Among other resources, the university program addresses vascular ultrasound and its contrast agents. Likewise, it analyzes the use of Magnetic Resonance Imaging and Computed Tomography in the diagnosis and management of vascular pathologies, facilitating safer and more effective procedures without resorting to invasive methods. Therefore, from this syllabus and through an innovative 100% online methodology, graduates get a decisive specialization for informed clinical decision making and optimize their practice.



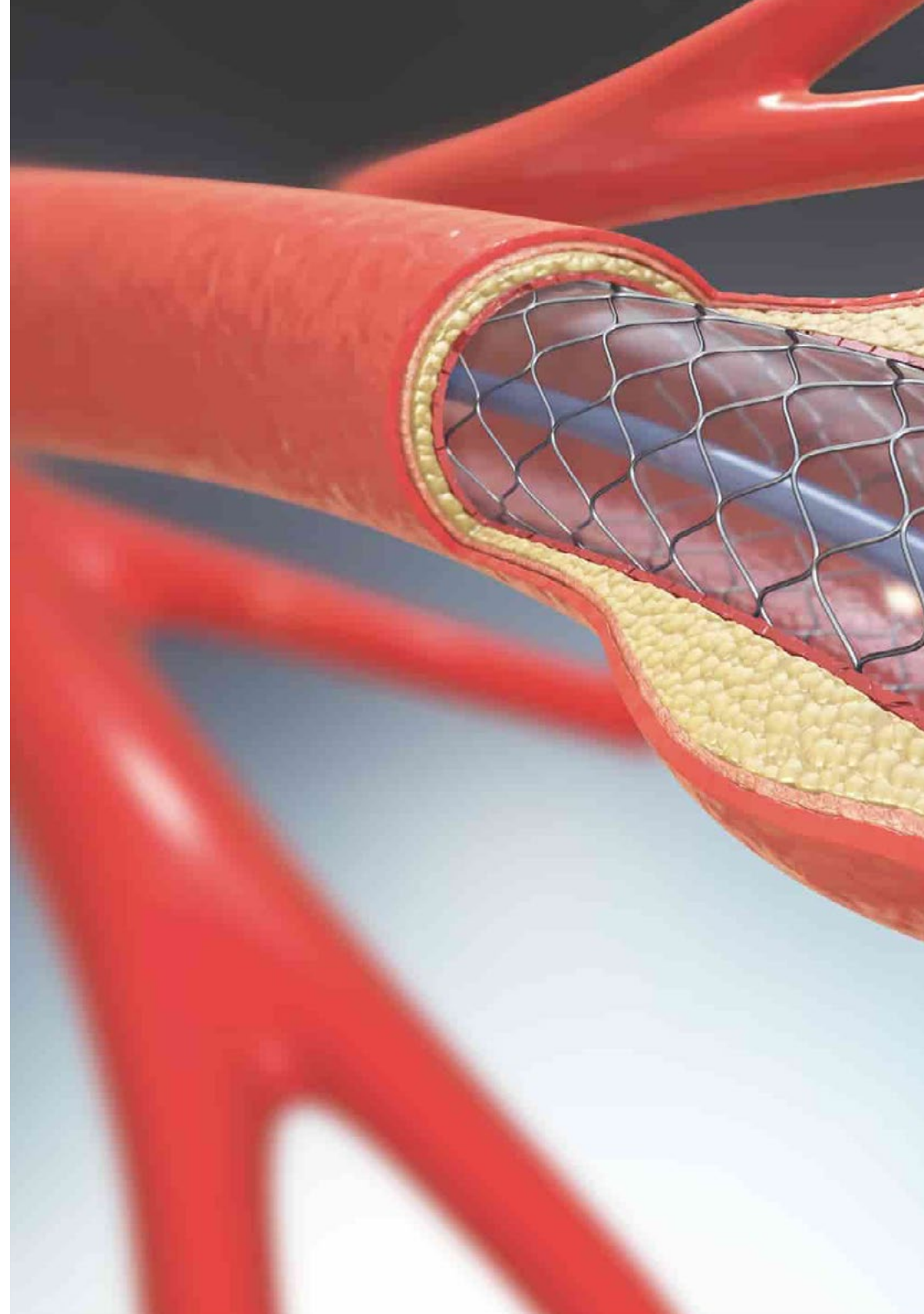


“

A study program that facilitates the assimilation of clinical procedures through detailed videos and other exclusive multimedia resources”

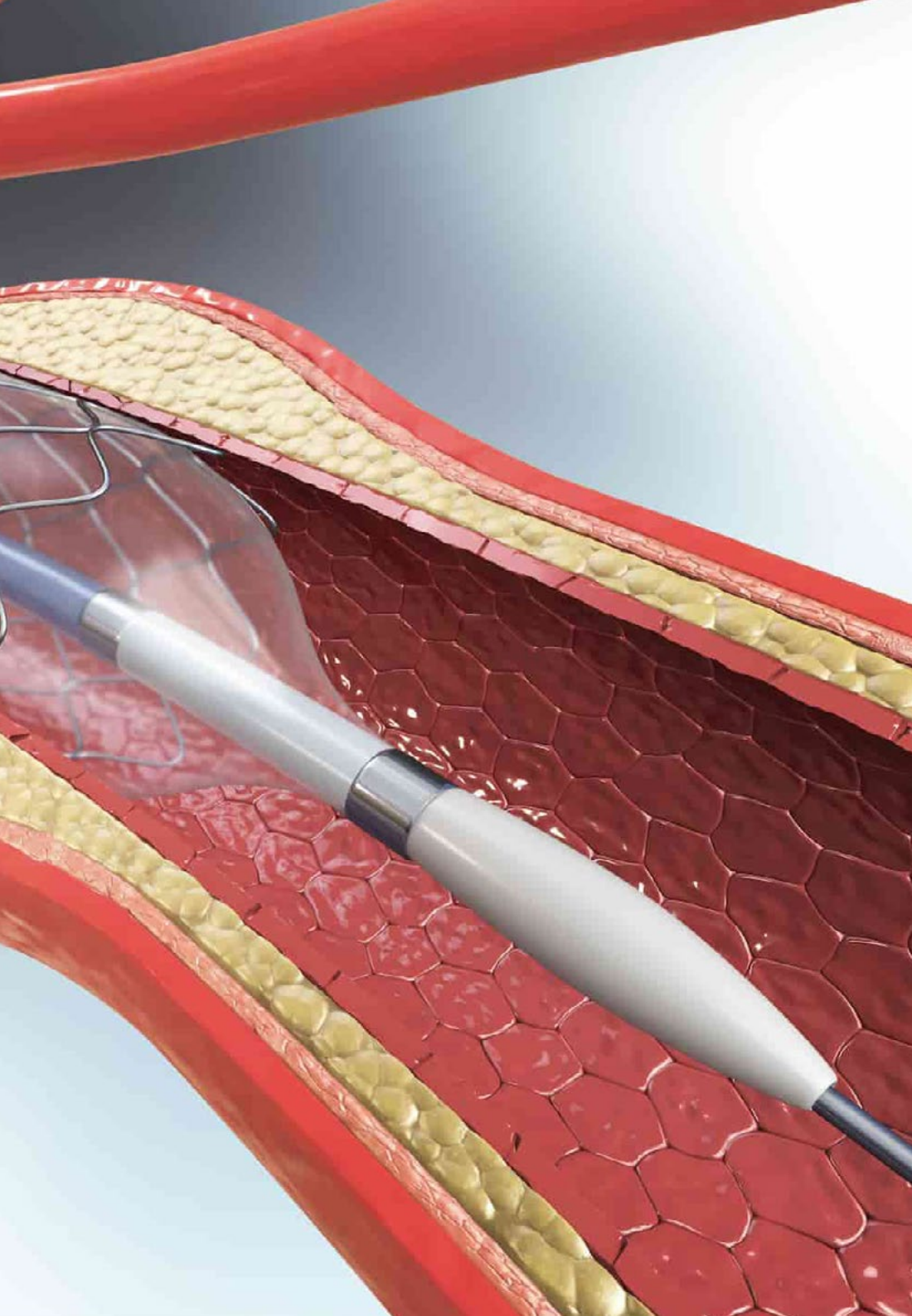
Module 1. Noninvasive Vascular Imaging

- 1.1. Ultrasound in the Diagnosis of Vascular Pathology Susceptible to Intervention
 - 1.1.1. Ultrasound
 - 1.1.2. Clinical Applications of Vascular Ultrasound
 - 1.1.3. Acquisition Techniques and Scanning Protocols
- 1.2. Grayscale Ultrasound in the Diagnosis of Vascular Pathology Susceptible to Intervention
 - 1.2.1. Interpretation of Grayscale Images
 - 1.2.2. Assessment of Vascular Morphology and Structure
 - 1.2.3. Differential Diagnosis and Normal Findings
- 1.3 Doppler Ultrasound in the Diagnosis of Vascular Pathology Susceptible to Intervention
 - 1.3.1. Doppler Effect
 - 1.3.2. Interpretation of Real Time Blood Flows
 - 1.3.3. Measurement of Velocities and Calculation of Hemodynamic Indices
- 1.4. Color Doppler Ultrasound in the Diagnosis of Vascular Pathology Susceptible to Intervention
 - 1.4.1. Color Doppler Ultrasound over Conventional Doppler Ultrasound
 - 1.4.2. Applications in the Diagnosis of Vascular Pathology
 - 1.4.3. Limitations and Artifacts of Color Doppler Ultrasound
- 1.5. Energy Doppler Ultrasound in the Diagnosis of Vascular Pathology
 - 1.5.1. Energy Doppler Ultrasound
 - 1.5.2. Clinical Utility in the Study of Low Velocity Vascular Flows
 - 1.5.3. Evaluation of Tissue Perfusion
- 1.6. Contrast Agents for Ultrasound in the Diagnosis of Vascular Pathology Susceptible to Intervention
 - 1.6.1. Contrast Agents
 - 1.6.2. Visualization and Characterization of Vascular Lesions
 - 1.6.3. Safety in the Use of Ultrasonographic Contrast Agents in Vascular Diagnostics in Vascular Diagnosis
- 1.7. Magnetic Resonance Imaging and Angiography
 - 1.7.1. Magnetic Resonance Imaging for the Diagnosis Prior to Endovascular Procedures
 - 1.7.2. Magnetic Resonance Angiography Protocols
 - 1.7.3. Image Interpretation and Differential Diagnosis



- 1.8. Computed Tomography and Computed Tomography Angiography Prior to Endovascular Procedures
 - 1.8.1. Image Acquisition and Optimization Protocols
 - 1.8.2. Applications in the Study of the Peripheral and Central Vasculature
 - 1.8.3. Evaluation of Complications and Limitations
- 1.9. Post-Processing of Diagnostic Images of Vascular Pathologies
 - 1.9.1. Data Reconstruction and Visualization Techniques
 - 1.9.2. Quantitative and Qualitative Image Analysis
 - 1.9.3. Integration of Results in the Radiological Report
- 1.10. Technological Advances and Trends in Noninvasive Vascular Imaging
 - 1.10.1. Innovations in Hardware and Software to Improve Image Quality
 - 1.10.2. Developments in Multimodality Imaging Techniques
 - 1.10.3. Personalization of Treatment

“Don't miss this academic opportunity where TECH provides you with exclusive and updated content on Non-Invasive Vascular Imaging in a convenient 100% online study format. Enroll now!”



05

Methodology

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

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



“

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

At TECH 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.

“

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

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

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.



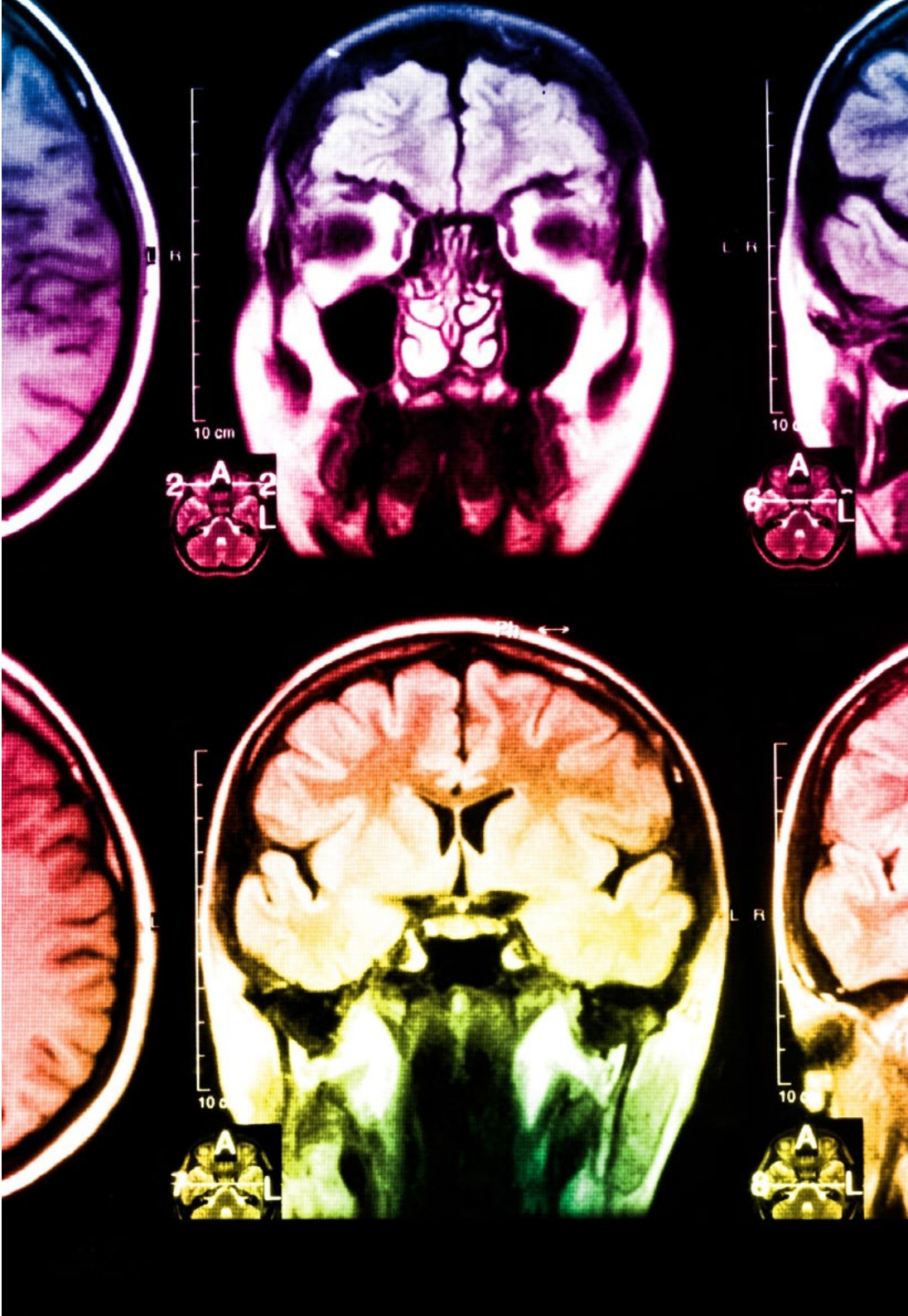
At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

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 applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



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

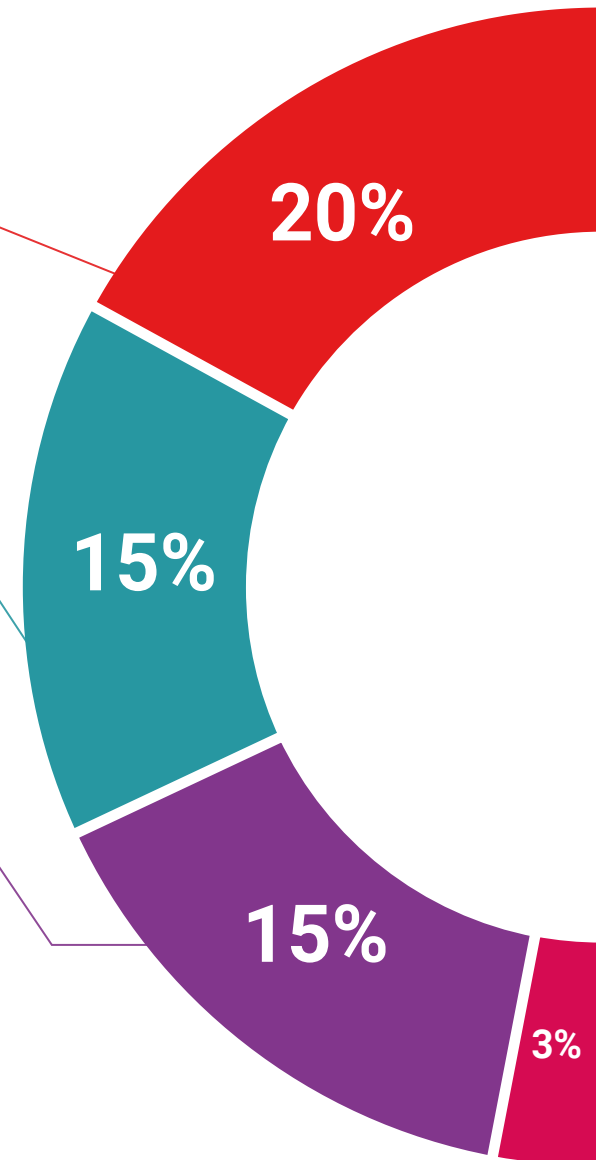
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

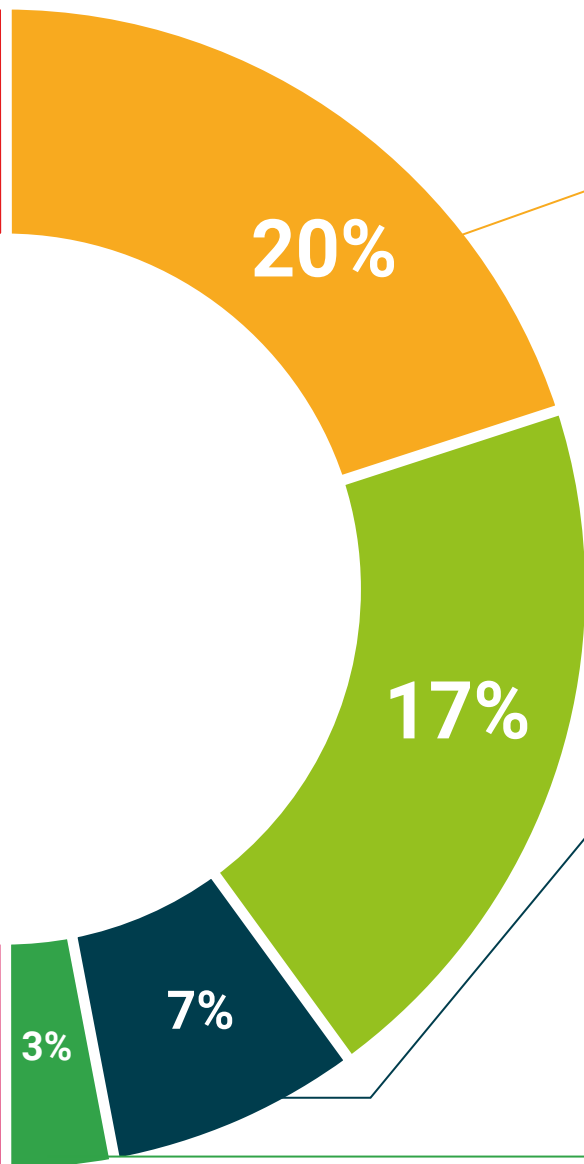
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



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 Non-Invasive Vascular Imaging guarantees, in addition to the most accurate and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



“

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 a **Postgraduate Certificate in Non-Invasive Vascular Imaging** 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.

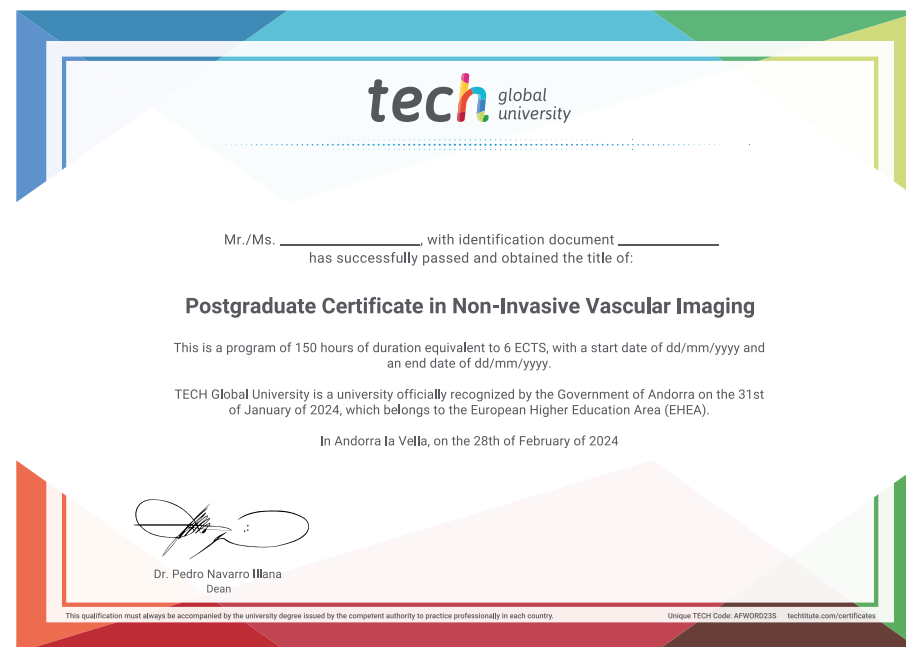
This **TECH Global University title**, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Non-Invasive Vascular Imaging**

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 quality
development languages
virtual classroom



Postgraduate Certificate Non-Invasive Vascular Imaging

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

Postgraduate Certificate

Non-Invasive Vascular Imaging

