

# Hybrid Professional Master's Degree

## Clinical Imaging for Emergency and Critical Care





## Hybrid Professional Master's Degree

### Clinical Imaging for Emergency and Critical Care

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Global University

Credits: 60 + 4 ECTS

Website: [www.techtute.com/us/medicine/hybrid-professional-master-degree/hybrid-professional-master-degree-clinical-imaging-emergency-critical-care](http://www.techtute.com/us/medicine/hybrid-professional-master-degree/hybrid-professional-master-degree-clinical-imaging-emergency-critical-care)

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# 01

# Introduction

Traffic accidents or sudden respiratory and cardiovascular failure, among many other issues, present clinical situations in which the patient must be treated urgently to achieve stabilization. Therefore, physicians must have extensive skills in the use of imaging tests to diagnose the extent of different pathologies and establish an adequate treatment to save the patient's life. For this reason, TECH has designed this program, which will increase medical knowledge in areas such as the interpretation of images of traumatic injuries or diseases produced in the cardiovascular system. In addition, it will do so by combining 100% online theoretical teaching with a 120-hour internship in a hospital center to optimize the learning process.





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*Thanks to this program, master the mechanisms to interpret the updated imaging tests aimed at detecting a traumatic injury”*

Diagnostic imaging is the best ally for doctors to quickly detect the pathology suffered by a patient who requires urgent intervention and then adapt the treatment and care to the results obtained. Given their relevance, diagnostic mechanisms have undergone an enormous revolution in recent years to enable them to be carried out in a short interval of time and to facilitate the tasks of physicians. Due to the positive impact they have on the possible recovery of the patient, the physician is obliged to master the interpretation of the most advanced tests in order to provide top quality health care.

That is why TECH has created this Hybrid Professional Master's Degree, in order to provide the health professional with the most updated knowledge in the field of diagnosis of diseases through imaging tests, as well as in the selection of the most appropriate tests based on the pathology in question. Throughout this academic period, students will expand their knowledge in the interpretation of images used to detect heart failure, a vascular lesion in the central nervous system or a bone fracture. Similarly, they will undertake an ultrasound evaluation in special situations such as patients suffering severe trauma, shock or stroke.

In turn, this academic itinerary is distinguished by the collaboration of an International Guest Director of maximum prestige and the best scientific and research results. This specialist is involved in the program through the development of 10 rigorous Masterclasses.

All this theoretical learning phase is developed in a 100% online mode, which enables students to complete their studies without the need to make uncomfortable trips to physical educational centers. In addition, this teaching is complemented with a 3-week internship in a reference hospital, where they will put into real work all their acquired knowledge and perfect their healthcare work.

This **Hybrid Professional Master's Degree in Clinical Imaging for Emergency and Critical Care** contains the most complete and up-to-date scientific program on the market. The most important features include:

- Development of more than 100 clinical cases presented by medical professionals with expertise in diagnostic imaging in emergency, urgent and critical care situations
- 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
- Updated imaging techniques for the detection of acute pathologies of the cardiovascular system
- State-of-the-art diagnostic imaging methods for detecting various head and neck injuries
- Protocols for performing urgent clinical ultrasound scans in cases of trauma, shock or respiratory failure
- 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
- In addition, you will be able to carry out a clinical internship in one of the best hospital centers in the world



*During this Hybrid Professional Master's Degree, you will receive a series of rigorous Masterclasses from an internationally renowned expert in the field of Clinical Imaging"*

“*Complete your exquisite theoretical learning with a hospital internship of 120 hours where, surrounded by the best professionals, you will enhance your skills in diagnostic imaging”*

In this proposed Master's program, of a professionalizing nature and blended learning modality, the program is aimed at updating medical experts in diagnostic imaging for patients in critical situations. The contents are based on the latest scientific evidence, and oriented in a didactic way to integrate theoretical knowledge into medical practice, and the theoretical-practical elements will facilitate the updating of knowledge and will allow decision making in patient management.

Thanks to their multimedia content developed with the latest educational technology, they will allow the medical professional to obtain situated and contextual learning, that is to say, a simulated environment that will provide immersive learning programmed to train in real situations. The design of this program is based on Problem-Based Learning, by means of which the student must try to solve the different professional practice situations that arise during the program. For this purpose, students will be assisted by an innovative interactive video system created by renowned experts.

*This program will allow you to exercise in simulated environments to face with solvency all the real challenges of your profession.*

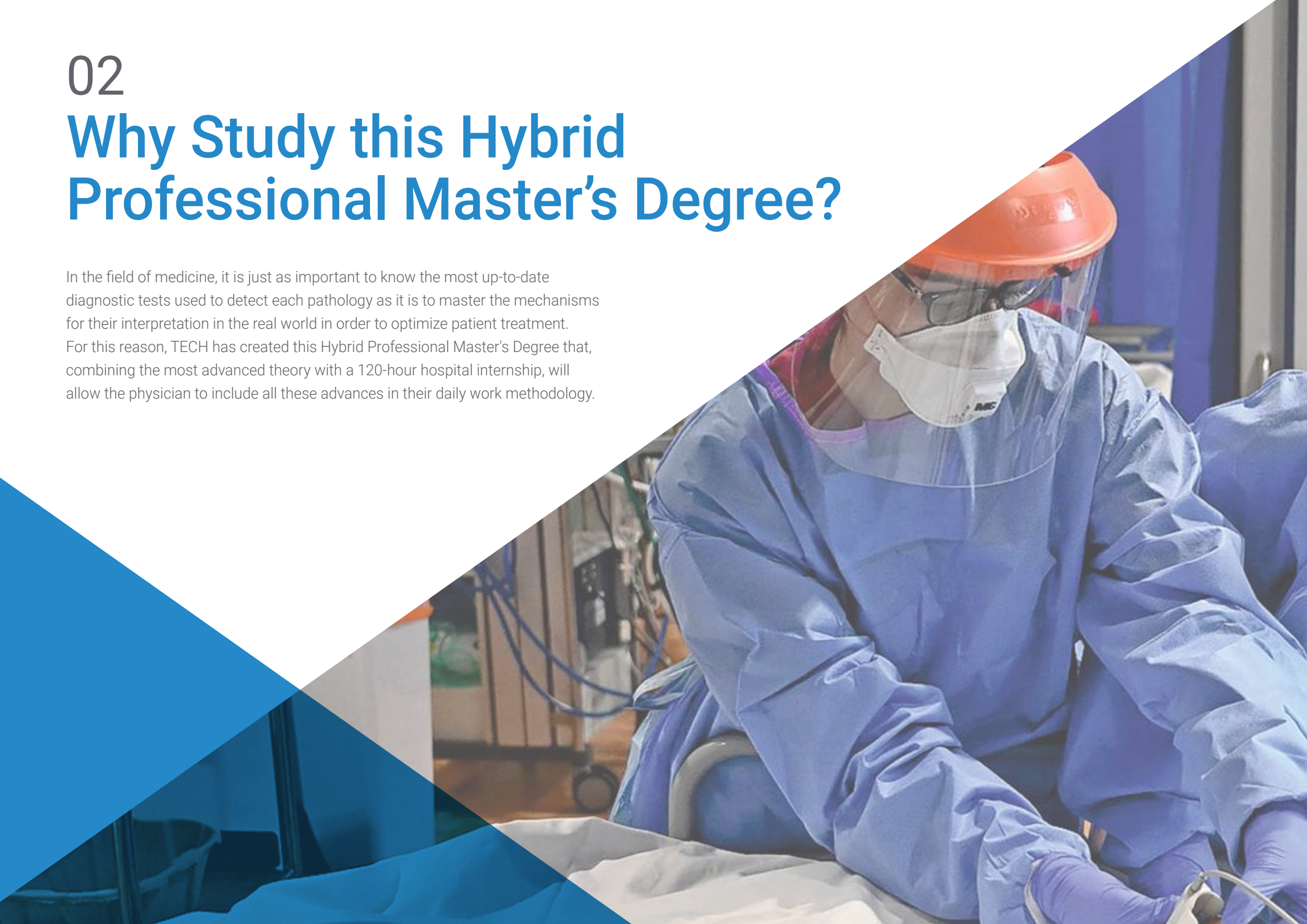
*Become a reference professional in the interpretation of imaging tests by enrolling in this program offered by TECH.*



# 02

## Why Study this Hybrid Professional Master's Degree?

In the field of medicine, it is just as important to know the most up-to-date diagnostic tests used to detect each pathology as it is to master the mechanisms for their interpretation in the real world in order to optimize patient treatment. For this reason, TECH has created this Hybrid Professional Master's Degree that, combining the most advanced theory with a 120-hour hospital internship, will allow the physician to include all these advances in their daily work methodology.







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*TECH offers a unique opportunity to its students to combine an excellent theoretical learning in the diagnosis of imaging diseases with a practical stay in a reference hospital”*

### 1. Updating from the latest technology available

The area of diagnostic imaging has experienced a notable development in recent years due to the improvement of the tests used to detect various diseases, which require an update in the physician's knowledge to master their interpretation. For this reason, TECH has designed this program, which will provide the professional with all these advances with a theoretical-practical approach.

### 2. Gaining in-depth knowledge from the experience of top specialists

The contents to which the student will have access in the theoretical part of this Hybrid Professional Master's Degree are carried out by the best experts in diagnostic imaging, which guarantees the applicability of all the knowledge offered. Likewise, in the practical part, you will be surrounded by specialists who will provide you with the best skills in this field.

### 3. Entering first-class clinical environments

TECH carefully selects all the centers available for internships. Thanks to this, the specialist will have guaranteed access to a prestigious clinical environment in the field of diagnostic imaging. In this way, you will be able to see the day-to-day work of a demanding, rigorous and exhaustive sector, always applying the latest theses and scientific postulates in its work methodology.





#### **4. Combining the best theory with state-of-the-art practice**

The vast majority of educational programs are characterized by requiring many hours of study and a tight schedule to ultimately learn concepts of little use in the workplace. In this line, this TECH program offers a 100% online theoretical teaching, adapted to the needs of the student and reinforced with a 3-week internship in a first class hospital center.

#### **5. Expanding the boundaries of knowledge**

TECH offers the possibility of completing the internship for this program in the best hospitals. In this way, the specialist will be able to catch up with great professionals practicing in first class hospitals. A unique opportunity that only TECH, the largest online university in the world, could offer.

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*You will have full practical immersion  
at the center of your choice”*

# 03 Objectives

The Hybrid Professional Master's Degree in Clinical Imaging for Emergency and Critical Care was created with the aim of allowing physicians to significantly expand and update their knowledge and skills in the field of diagnostic imaging pathologies. In this program, you will delve into the interpretation of a wide range of medical tests and the diagnosis of diseases by means of these tests. All this, guaranteed by a series of general and specific objectives proposed by TECH.



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*In a theoretical-practical way, you will assimilate the best techniques to interpret the pathologies produced in the locomotor or digestive apparatus”*



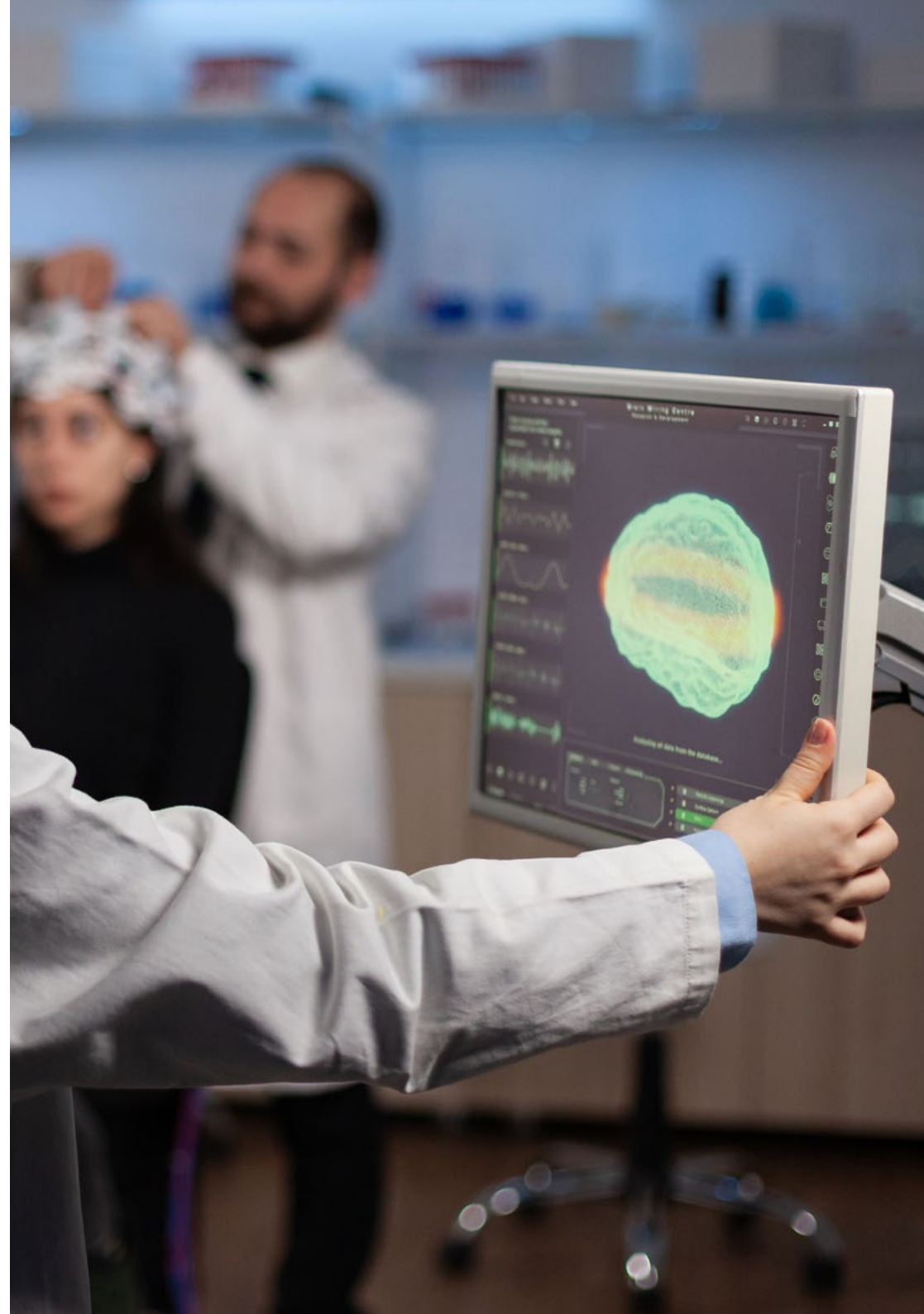
## General Objective

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- The overall objective of the Hybrid Professional Master's Degree in Clinical Imaging for Emergency and Critical Care is to provide the professional with the appropriate tools to update and expand their knowledge in this field by combining a theoretical learning phase with a practical stay in a hospital of 120 hours



*With this Hybrid Professional Master's Degree, you will update your knowledge in the interpretation of clinical images and offer a detailed and quality service to each patient"*





## Specific Objectives

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### Module 1. Fundamental Diagnostic Imaging Techniques

- ♦ Explain the characteristics of image quality and artifacts in conventional radiology
- ♦ Define the parameters that guarantee patient safety
- ♦ Detail the physical principles involved in computed tomography, magnetic resonance imaging and digital angiography

### Module 2. Imaging in Acute Pathology of the Respiratory System

- ♦ Describe the use of imaging in asthma, COPD, bronchiectasis and airway trauma
- ♦ Identify the various uses of imaging in the diagnosis of infectious and hemorrhagic pulmonary pathology, barotrauma and contusion

### Module 3. Imaging in Acute Pathology of the Cardiovascular System

- ♦ Describe the use of imaging in acute mediastinal, esophageal, pleural, chest wall and diaphragmatic pathology
- ♦ Interpret imaging in acute myocardial and pericardial pathology, as well as in venous thromboembolic disease

### Module 4. Imaging in Acute Pathology of the Central Nervous System

- ♦ Identify the uses of imaging in the diagnosis of emergency care for traumatic, vascular and infectious injuries of the central nervous system
- ♦ Use imaging to detect a possible decrease in the level of consciousness
- ♦ Use imaging for the diagnosis of facial trauma in the emergency department

### Module 5. Imaging in Acute Pathology of the Head and Neck

- ♦ Describe the use of imaging in emergency care in trauma, occupational injuries and arterial and venous pathologies of the neck

### Module 6. Imaging in Acute Pathology of the Locomotor System

- ♦ Explain the different image-guided procedures in the locomotor system
- ♦ Use imaging as a diagnostic method in the emergency care of bone fractures or tendon muscle injuries

### Module 7. Imaging in Acute Pathology of the Digestive System

- ♦ Use imaging in the emergency care of chronic liver disease, abdominal trauma and the different particularities related to the acute abdomen
- ♦ Delve into the use of imaging in the emergency care of tumor complications

### Module 8. Imaging in Acute Pathology of the Urinary System

- ♦ Identify the different uses of imaging in renal colic, acute urinary retention and infection or genitourinary trauma

### Module 9. Imaging in Acute Pathology of the Reproductive System

- ♦ Describe the use of imaging in emergency care of the male reproductive system, emergency obstetric and breast pathology, endometriosis or pelvic inflammatory disease

### Module 10. Emergency Clinical Ultrasound

- ♦ Define the application of ultrasound in shock, sepsis or different types of trauma
- ♦ Use ultrasound for the treatment of cardiac arrest, respiratory failure, abdominal pain or stroke

# 04 Skills

After successfully completing the theoretical part of this Hybrid Professional Master's Degree, the physician will have significantly expanded their skills in the interpretation of diagnostic tests used to detect different pathologies in various parts of the human body, thus enhancing their healthcare practice.





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*This program is the finishing touch to perfect your health competencies in diagnostic imaging and place you at the forefront of medicine”*



## General Skills

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- ♦ Possess and understand knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context
- ♦ Apply acquired knowledge and problem-solving skills in new or unfamiliar environments within broader contexts related to their area of study
- ♦ Integrate knowledge and deal with the complexity of making judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments
- ♦ Communicate conclusions to specialized and non-specialized audiences in a clear and unambiguous manner





## Specific Skills

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- ◆ Know the physical principles and instrumental fundamentals of clinical imaging for emergencies and critical care
- ◆ Master the existing indications and limitations for each case
- ◆ Manage its applicability in the most frequent clinical situations
- ◆ Facilitate the performance in the safest way for the patient
- ◆ Interpret your results with confidence to detect and treat the diseases found
- ◆ Use imaging techniques to non-invasively predict the results of invasive diagnostic procedures
- ◆ Use imaging to guide invasive therapeutic procedures and minimize their risks



*Accurately interpret, through this program, a wide variety of diagnostic tests”*

# 05

# Course Management

Thanks to TECH's commitment to preserve the high educational level characteristic of its degrees, this Hybrid Professional Master's Degree is directed and taught by professionals actively working in the field of Intensive Care Medicine or Medical Radiology. In addition, the teaching resources that you will access throughout this program are developed by these experts themselves, so that the contents offered will be in tune with the latest scientific developments.





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*This teaching staff is made up of top-level professionals in fields such as Intensive Care Medicine or Medical Radiology, who will provide you with the knowledge most applicable to your daily activity”*

## International Guest Director

Dr. Hamid Shokoohi is one of the leading international figures in the scientific study of emergency and critical care ultrasound. His extensive career has led him to practice as an **attending physician** in the **Emergency Department of the Massachusetts General Hospital** and to be in charge of the direction of the **Emergency Ultrasound study areas** and the **Ultrasound department of this same first level health space**.

With more than 150 publications in high impact journals, Dr. Shokoohi has become one of the most prestigious specialists in **clinical ultrasound**. His presence at national and international congresses raises the level of competence of the rest of the attending professionals and attracts numerous experts in his field.

As a result of his excellent research work, he has been recognized by organizations such as the AEUS, which has awarded him the **Titan in Research Award** and the **Teaching Excellence Award** for his academic and research contribution. In addition, he directs the MGH Emergency Ultrasound Fellowship Program, which was also awarded the Stellar Clinical Ultrasound Fellowship Program Award.

The clinical use of ultrasound in the care of patients with shock and respiratory distress and the safety and efficacy of ultrasound-guided procedures are some of the fields in which he has set his study. At the same time, his interest in **innovation** has led him to seek innovative applications for **ultrasound** and the use of **AI** in these devices.

Likewise, in his professional career, high-level education has been part of his daily life. In this regard, Dr. Shokoohi is **Associate Professor of Emergency Medicine** at Harvard University and GWU. This superb professional encourages the creation of specific training for physicians to improve their diagnostic skills and abilities.



## Dr. Shokoohi, Hamid

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- Director of International Clinical Ultrasound at Massachusetts General Hospital, Boston, USA
- Attending Physician in the Emergency Department at Massachusetts General Hospital
- Attending Physician at the Wound Care and Hyperbaric Medicine Center at GWU
- Attending Physician in Emergency Medicine at GWU
- Director of the Harvard Emergency Fellowship (Ultrasound Fellowship at MGB)
- Director of Emergency Ultrasound Research at Massachusetts General Hospital
- Associate Director of the Division of Ultrasound at Massachusetts General Hospital
- Advisor to the Executive Board of the Society of Clinical Ultrasound Fellowships (SCUF)
- Chair of the SAEM Academic Professional Development Task Force
- Member of: Education Committee, Society of Clinical Ultrasound Fellowships SCUF, American College of Emergency Physicians, American Institute of Ultrasound in Medicine, American Registry for Diagnostic Medical Sonography



*Thanks to TECH, you will be able to learn with the best professionals in the world"*

## Management



### 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

## Professors

### Dr. Benito Vales, Salvador

- ♦ Internist, former Chief of the Emergency Department of the Hospital de la Santa Cruz y San Pablo
- ♦ Specialist in Internal and Intensive Care Medicine
- ♦ Emeritus Professor at the Autonomous University of Barcelona (UAB)

### Dr. Turbau Valls, Miquel

- ♦ Head of the Emergency Department at the University Hospital de la Santa Creu i Sant Pau
- ♦ Emergency Department at the University Hospital de la Santa Creu i Sant Pau
- ♦ Specialist in Internal Medicine
- ♦ Researcher specialized in Internal Medicine
- ♦ Bachelor's Degree in Medicine

### Dr. León Ledesma, Raquel

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

### Dr. Angulo Cuesta, Javier

- ♦ Director of the Journal Actas Urológicas Españolas, Elsevier. Spanish Association of Urology (AEU)
- ♦ Head of Urology Department. Getafe University Hospital
- ♦ Staff Urologist. Principe de Asturias University Hospital
- ♦ Professor. European University of Madrid



Urology Specialist. Basurto University Hospital Doctor in Bladder Carcinoma. University of the Basque Country/Euskal Herriko Unibertsitatea  
Bachelor's Degree in Medicine. University of the Basque Country/Euskal Herriko Unibertsitatea Specialist in Urology  
Fellowship in the Department of Urology. Wayne State University

- ♦ Member of the Spanish Association of Urology

#### **Dr. Igeño Cano, José Carlos**

- ♦ Chief of the Intensive Care and Emergency Medicine Department of the San Juan de Dios Hospital, Cordoba
- ♦ 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 Hospital Virgen de Guadalupe
- ♦ Attending ICU Physician in the Health Service of Castilla, La Mancha
- ♦ Attending Physician, Medicine and Neurotrauma Unit, Nuestra Señora de la Candelaria Hospital
- ♦ Head of Critical Patient Transport Service in Ambulances Juan Manuel SL
- ♦ Master's Degree in Clinical Management, Medical and Care Management from CEU Cardenal Herrera University
- ♦ Member of: Pan-American and Iberian Federation of Critical Medicine and Intensive Care and Spanish Society of Intensive Care Medicine, Critical Care and Coronary Units

#### **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. Costa Subias, Joaquín**

- ♦ Medical Specialist in Radiodiagnosis
- ♦ Attending Physician of Radiodiagnosis at the University Hospital of Getafe
- ♦ Medical Specialist at the University Hospital Central de la Cruz Roja San José y Santa Adela
- ♦ Doctor of Medicine and Surgery from the University of Zaragoza
- ♦ Member of the International Medical Imaging Network

#### **Dr. Soria Jerez, Juan Alfonso**

- ♦ Specialist in Radiology Spanish Association of Technicians and Graduates in Radiology, Radiotherapy and Nuclear Medicine
- ♦ Specialist in the Radiodiagnostic Service at the University Hospital of Getafe
- ♦ Specialist Technician in Radiodiagnosis
- ♦ Co-author of the book *Tomografía Computarizada Dirigida a Técnicos Superiores en Imagen para el Diagnóstico (Computed Tomography Aimed at Senior Diagnostic Imaging Technicians)*

#### **Dr. Jiménez Ruiz, Ahgiel**

- ♦ Surgeon Specialist in Critical Care Medicine
- ♦ Specialist in Critical Medicine at the General Hospital La Perla Nezahualcóyotl
- ♦ Specialist in Intensive Care at IMSS, Hospital General Regional No. 25
- ♦ Specialist in Critical Care Medicine at the Hospital Juárez de Mexico
- ♦ Specialist in Critical Care Medicine from the National Autonomous University of Mexico

#### **Dr. Moliné Pareja, Antoni**

- ♦ Specialist in Internal Medicine
- ♦ Emergency Department Physician. University Hospital de la Santa Creu i Sant Pau
- ♦ Bachelor's Degree in Medicine and Surgery. Autonomous University of Barcelona

# 06

## Structure and Content

The curriculum of this program is made up of 10 modules with which you will delve into the selection and interpretation of different imaging tests for the detection of various pathologies that require urgent attention. Likewise, the teaching materials that you will have at your disposal during the duration of this Hybrid Professional Master's Degree are present in formats such as readings, video and evaluative tests. In this way, through a 100% online methodology, you will obtain an efficient teaching without the need to depend on tight study schedules.



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*To optimize your learning, TECH provides you with didactic resources in formats such as explanatory videos or interactive summaries”*

## Module 1. Fundamental Diagnostic Imaging Techniques

- 1.1. Conventional Radiology (CR)
  - 1.1.1. Physical Radiology
  - 1.1.2. X-Ray Beam
  - 1.1.3. Analog Radiology
  - 1.1.4. Digital Radiology
  - 1.1.5. Image Quality and Artifacts
  - 1.1.6. Conventional Radiology Equipment
  - 1.1.7. Patient Safety
  - 1.1.8. Radiobiology and Radiological Protection
- 1.2. Ultrasound
  - 1.2.1. Physical Principles
  - 1.2.2. Image Formation in B Mode
  - 1.2.3. Transducers and Imaging
  - 1.2.4. Ultrasound Equipment
  - 1.2.5. Parameters Dependent on the Operator and Artifacts
  - 1.2.6. Quality and Safety for Patients in Ultrasound
- 1.3. Computed Tomography (CT)
  - 1.3.1. Physical Principles
  - 1.3.2. CT Equipment
  - 1.3.3. Image Acquisition
  - 1.3.4. Image Construction
  - 1.3.5. Quality
  - 1.3.6. Post-Process
  - 1.3.7. CT Patients Safety
  - 1.3.8. Radiological Protection in High Doses
- 1.4. Magnetic Resonance Imaging (MRI)
  - 1.4.1. Physical Principles
  - 1.4.2. Tissue Contrast
  - 1.4.3. MRI Equipment
  - 1.4.4. Obtaining an Image and Its Formation
  - 1.4.5. Sequences
  - 1.4.6. Artifacts
  - 1.4.7. MRI Patient Safety

- 1.5. Digital Angiography
  - 1.5.1. Physical Principles
  - 1.5.2. Digital Angiography Equipment
  - 1.5.3. Materials and Contrast Media
  - 1.5.4. Acquisition and Construction of the Image
  - 1.5.5. Digital Subtraction, Masks and Road Map
  - 1.5.6. Radiological Protection in High Doses
- 1.6. Nuclear Medicine
  - 1.6.1. Physical Principles
  - 1.6.2. Gamma Cameras
  - 1.6.3. PET and SPET Equipment
  - 1.6.4. Hybrid Equipment
  - 1.6.5. Image Quality and Acquisition
  - 1.6.6. Radiological Protections and Radiopharmacology

## Module 2. Imaging in Acute Pathology of the Respiratory System

- 2.1. Upper Airway Pathology
  - 2.1.1. Upper Airway Infection
  - 2.1.2. Asthma, COPD, Bronchiectasis
  - 2.1.3. Airway Trauma: Laceration and Rupture
  - 2.1.4. Aspiration of Foreign Bodies
- 2.2. Pulmonary Pathology
  - 2.2.1. Infections
  - 2.2.2. Atelectasis and Bilateral White Hemithorax
  - 2.2.3. Embolism
  - 2.2.4. Alveolar Hemorrhage
  - 2.2.5. Barotrauma and Contusion
  - 2.2.6. Toxins and Drugs
- 2.3. Mediastinal Pathology
  - 2.3.1. Pneumomediastinum
  - 2.3.2. Mediastinal Hematoma
  - 2.3.3. Infection: Mediastinitis and Abscess
  - 2.3.4. Esophageal Pathology: Impaction, Perforation and Fistulas

- 2.4. Pathology of the Pleura, Chest Wall and Diaphragm
  - 2.4.1. Pleural Effusion, Hemothorax, Empyema and Chylothorax
  - 2.4.2. Pneumothorax
  - 2.4.3. Fractures of the Rib Cage
  - 2.4.4. Hernias, Diaphragmatic Paralysis and Diaphragmatic Rupture
- 2.5. Major Syndromes
  - 2.5.1. Dyspnea and Respiratory Distress
  - 2.5.2. Chest Pain
  - 2.5.3. Hemoptysis
  - 2.5.4. Persistent Cough
  - 2.5.5. Stridor
- 2.6. Tubes and Catheters
  - 2.6.1. Central Vascular Catheters
  - 2.6.2. Swan-Ganz Catheter
  - 2.6.3. Endotracheal Tubes
  - 2.6.4. Pleural Drain
  - 2.6.5. Nasogastric Tubes
  - 2.6.6. Other Devices

### Module 3. Imaging in Acute Pathology of the Cardiovascular System

- 3.1. Myocardial Pathology
  - 3.1.1. Acute Coronary Syndrome
  - 3.1.2. Myocardial Laceration and Contusion
  - 3.1.3. Myocarditis
- 3.2. Pericardial Pathology
  - 3.2.1. Acute Pericarditis
  - 3.2.2. Pericardial Effusion
  - 3.2.3. Cardiac Tamponade
- 3.3. Acute Aortic Syndrome
  - 3.3.1. Aortic Trauma
  - 3.3.2. Aortic Dissection
  - 3.3.3. Aortic Aneurysm

- 3.4. Heart Failure
  - 3.4.1. Congestive Heart Failure
  - 3.4.2. Pulmonary Edema
- 3.5. Venous Thromboembolic Disease
  - 3.5.1. Deep Vein Thrombosis
  - 3.5.2. Pulmonary Embolism
- 3.6. Shock and Cardiac Arrest
  - 3.6.1. Types of Shock
  - 3.6.2. Pulseless Electrical Activity
  - 3.6.3. Cardiorespiratory Arrest

### Module 4. Imaging in Acute Pathology of the Central Nervous System

- 4.1. Central Nervous Trauma Lesions
  - 4.1.1. Epidural Hematoma
  - 4.1.2. Subdural Hematoma
  - 4.1.3. Post-Traumatic Subarachnoid Hemorrhage
  - 4.1.4. Post-Traumatic Parenchymal Hemorrhage
  - 4.1.5. Diffuse Axonal Injury
- 4.2. Central Nervous System Vascular Lesions
  - 4.2.1. Ischemic Strokes
  - 4.2.2. Hemorrhagic Strokes
  - 4.2.3. Venous Sinus Thrombosis
- 4.3. Non-Traumatic Subarachnoid Hemorrhage
  - 4.3.1. Aneurysms
  - 4.3.2. Arteriovenous Malformations
  - 4.3.3. Perimesencephalic Hemorrhages
  - 4.3.4. Other Causes of Subarachnoid Hemorrhage
- 4.4. Central Nervous System Infections
  - 4.4.1. Meningitis
  - 4.4.2. Encephalitis
  - 4.4.3. Cerebral Abscess

- 4.5. Alterations in the Level of Consciousness
  - 4.5.1. Non-Traumatic Coma
  - 4.5.2. Confused States
  - 4.5.3. Delirium
- 4.6. Involuntary Movements
  - 4.6.1. Judicial Crises
  - 4.6.2. Myoclonus
  - 4.6.3. Parkinson's Disease

### Module 5. Imaging in Acute Pathology of the Head and Neck

- 5.1. Facial Trauma
  - 5.1.1. Anatomy of the Facial Region
  - 5.1.2. Structure of the Facial Region
  - 5.1.3. Types of Facial Trauma
  - 5.1.4. Facial Fractures
  - 5.1.5. Vascular Injuries of the Face
- 5.2. Ocular Trauma
  - 5.2.1. Ocular Anatomy
  - 5.2.2. Retinal Detachment
  - 5.2.3. Penetrating Injuries to the Eyeball
  - 5.2.4. Other Ocular Lesions
- 5.3. Neck Trauma
  - 5.3.1. Anatomy of the Neck
  - 5.3.2. Muscular Injuries of the Neck
  - 5.3.3. Vascular Injuries of the Neck
  - 5.3.4. Upper Airway Injuries
  - 5.3.5. Cervical Spine Injuries
- 5.4. Occupational Neck Injuries
  - 5.4.1. Thyroid Tumor Pathology
  - 5.4.2. Pathology of the Thymus
  - 5.4.3. Lymphatic Pathology in the Neck
  - 5.4.4. Infections of Soft Tissues
  - 5.4.5. Abscesses in the Neck

- 5.5. Arterial Pathology of the Neck
  - 5.5.1. Arterial Anatomy of the Neck
  - 5.5.2. Arterial Trauma
  - 5.5.3. Aneurism in the Neck
  - 5.5.4. Arterial Occlusion in the Neck
- 5.6. Venous Pathology of the Neck
  - 5.6.1. Venous Anatomy of the Neck
  - 5.6.2. Venous Trauma
  - 5.6.3. Venous Occlusion in the Neck
  - 5.6.4. Vascular Approach

### Module 6. Imaging in Acute Pathology of the Locomotor System

- 6.1. Acute Pathology of Soft Tissues
  - 6.1.1. Anatomy and References in the Skin and Soft Tissue
  - 6.1.2. Skin and Soft Tissue Infections
  - 6.1.3. Hematomas
  - 6.1.4. Traumatic Vascular Injuries
- 6.2. Articular Pathology
  - 6.2.1. Anatomy and References in Joint Structure
  - 6.2.2. Bursitis
  - 6.2.3. Arthritis
  - 6.2.4. Hemarthrosis
- 6.3. Foreign Bodies
  - 6.3.1. Identification of Foreign Bodies According to their Nature
  - 6.3.2. Identification of Foreign Bodies According to their Permanence Time in Tissues
- 6.4. Bone Fractures
  - 6.4.1. Anatomy and References in Long Bones
  - 6.4.2. Anatomy and References in Irregular Bones
  - 6.4.3. Differentiation Between Fractures and Osteolysis

- 6.5. Muscular and Tendon Lesions
  - 6.5.1. Muscular Anatomy
  - 6.5.2. Tendon Anatomy
  - 6.5.3. Intramuscular Hematomas
  - 6.5.4. Muscular Hernias
  - 6.5.5. Tendon Ruptures
- 6.6. Image-Guided Procedures in the Locomotor System
  - 6.6.1. Arthrocentesis
  - 6.6.2. Hematoma Drainage
  - 6.6.3. Abscess Drainage
  - 6.6.4. Peripheral Nerve Block

## Module 7. Imaging in Acute Pathology of the Digestive System

- 7.1. Chronic Liver Diseases
  - 7.1.1. Edemoascitic Decompensation
  - 7.1.2. Hepatopulmonary Syndrome
  - 7.1.3. Gastrointestinal Bleeding
  - 7.1.4. Abdominal Pain
  - 7.1.5. Portal Thrombosis
  - 7.1.6. Peritonitis
- 7.2. Abdominal Trauma
  - 7.2.1. Liver Injuries
  - 7.2.2. Spleen Injuries
  - 7.2.3. Pancreatic Injuries
  - 7.2.4. Intestinal Injuries
  - 7.2.5. Diaphragmatic Rupture
  - 7.2.6. Abdominal Wall Injuries
- 7.3. Acute Diffuse Abdomen and Abdominal Wall
  - 7.3.1. Intestinal Ischemia
  - 7.3.2. Intestinal Obstruction
  - 7.3.3. Volvulus
  - 7.3.4. Hollow Viscera Perforation
  - 7.3.5. Pneumoperitoneum
  - 7.3.6. Abdominal Fistula
  - 7.3.7. Wall Hernias
  - 7.3.8. Soft Tissue Infections
- 7.4. Acute Abdomen: Upper Abdomen
  - 7.4.1. Peptic Syndrome
  - 7.4.2. Cholecystitis
  - 7.4.3. Biliary Colic
  - 7.4.4. Cholangitis
  - 7.4.5. Pancreatitis
  - 7.4.6. Hepatitis
  - 7.4.7. Hepatic and Subphrenic Abscesses
  - 7.4.8. Splenic Infarction and Abscess
- 7.5. Acute Abdomen: Lower Abdomen
  - 7.5.1. Appendicitis
  - 7.5.2. Mesenteric Adenitis
  - 7.5.3. Intraperitoneal and Retroperitoneal Abscesses
  - 7.5.4. Chronic Inflammatory Intestinal Diseases
  - 7.5.5. Ileitis and Colitis
  - 7.5.6. Diverticulitis
- 7.6. Tumor Complications
  - 7.6.1. Metastasis
  - 7.6.2. Bleeding
  - 7.6.3. Post-Surgery Complications
  - 7.6.4. Post-Irradiation Complications

## Module 8. Imaging in Acute Pathology of the Urinary System

- 8.1. Renal Colic
  - 8.1.1. Pathophysiology of Obstructive Uropathy
  - 8.1.2. Ectasia of the Urinary Tract
  - 8.1.3. Hydronephrosis
  - 8.1.4. Urinary Lithiasis
  - 8.1.5. Other Causes of Obstructive Uropathy
  - 8.1.6. Ureteral Catheterization
  - 8.1.7. Nephrostomy
- 8.2. Urinary Retention
  - 8.2.1. Bladder Balloon
  - 8.2.2. Benign Prostatic Hypertrophy
  - 8.2.3. Secondary Bladder Changes
  - 8.2.4. Urethral Stenosis
  - 8.2.5. Other Causes of Urinary Retention
  - 8.2.6. Complications of the Bladder Probe
- 8.3. Urinary Infection
  - 8.3.1. Acute Cystitis
  - 8.3.2. Acute Pyelonephritis
  - 8.3.3. Acute Prostatitis
  - 8.3.4. Chronic Prostatitis
  - 8.3.5. Orchiepididymitis
  - 8.3.6. Renal Abscess
  - 8.3.7. Prostate Abscess
  - 8.3.8. Fournier's Gangrene
- 8.4. Hematuria
  - 8.4.1. Hematuria due to Bladder Tumor
  - 8.4.2. Hematuria due to Renal Mass
  - 8.4.3. Hematuria due to Other Causes
  - 8.4.4. Clot Wash
  - 8.4.5. Three-Way Catheterization and Continuous Serum Washer
  - 8.4.6. Spontaneous Retroperitoneal Bleeding

- 8.5. Genitourinary Trauma
  - 8.5.1. Renal Trauma
  - 8.5.2. Renal Pedicle Avulsion
  - 8.5.3. Urethral Trauma
  - 8.5.4. Extraperitoneal Bladder Rupture
  - 8.5.5. Intraperitoneal Bladder Rupture
  - 8.5.6. Anterior Urethral Trauma
  - 8.5.7. Posterior Urethral Trauma
  - 8.5.8. Testicular Trauma
- 8.6. Penis and Testicle Emergencies
  - 8.6.1. Phimosis and Paraphimosis
  - 8.6.2. Testicular Torsion
  - 8.6.3. Hydatide Torsion
  - 8.6.4. Orchiepididymitis
  - 8.6.5. Priapism
  - 8.6.6. Penile Rupture
  - 8.6.7. Hydrocele and Hematocele

## Module 9. Imaging in Acute Pathology of the Reproductive System

- 9.1. Adnexal Pathology
  - 9.1.1. Benign Ovarian Pathology
  - 9.1.2. Primary and Metastatic Malignant Ovarian Formations
  - 9.1.3. Tubal Pathology
  - 9.1.4. Radiologic Monitoring and Complications of Tubal Occlusion Devices
  - 9.1.5. Ovarian Hyperstimulation Syndrome
- 9.2. Pelvic Inflammatory Disease
  - 9.2.1. Etiopathogenesis and Clinical Assessment
  - 9.2.2. Imaging Diagnosis of PID
  - 9.2.3. Differential Diagnosis of PID
  - 9.2.4. The Role of Radiotherapy in the Treatment of PID



- 9.3. Uterine Pathology
  - 9.3.1. Uterine Malformations
  - 9.3.2. Myomatous Uterus
  - 9.3.3. Myoma Embolization. Indications and Complications
  - 9.3.4. Post-Surgical Complications of Myomectomy, Hysterectomy and IUD Insertion
- 9.4. Endometriosis
  - 9.4.1. Cystic Endometriosis
  - 9.4.2. Deep Endometriosis
  - 9.4.3. Intestinal Endometriosis
  - 9.4.4. Extrapelvic Endometriosis
  - 9.4.5. Adenomyosis
- 9.5. Emergency Obstetric Pathology
  - 9.5.1. Abdominal Pain of Obstetric Origin in Pregnant Women
  - 9.5.2. Premature Detachment of the Placenta Normoinserta
  - 9.5.3. Placenta Previa and Placental Accreta
  - 9.5.4. Abortion
  - 9.5.5. Ectopic Pregnancy
- 9.6. Breast Pathology
  - 9.6.1. Inflammatory/ Infectious Disorders
  - 9.6.2. Traumatic Injuries
  - 9.6.3. Neoplasms
  - 9.6.4. Post-Surgery Complications
  - 9.6.5. Emergency Benign Pathology

## Module 10. Emergency Clinical Ultrasound

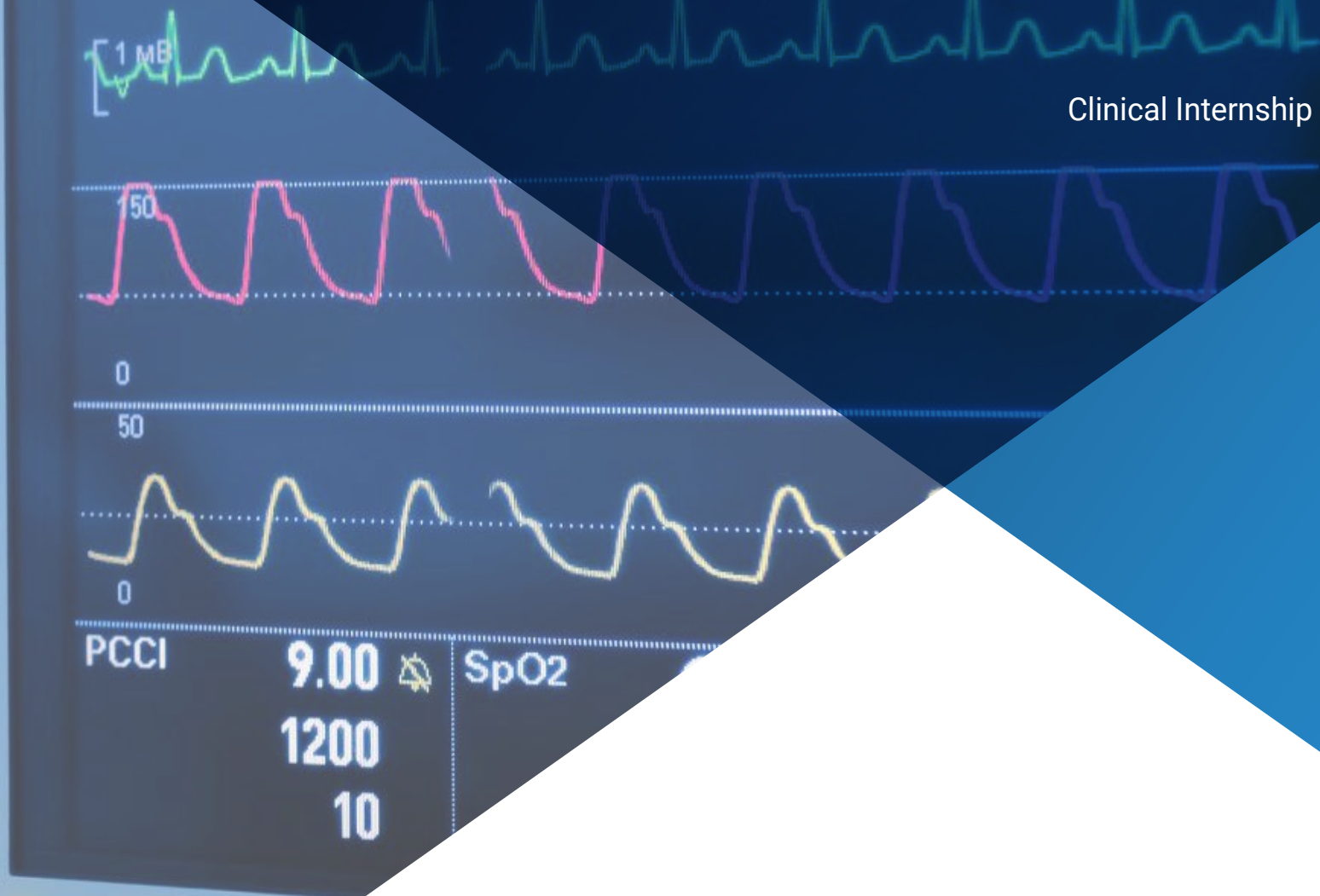
- 10.1. Cardiac Arrest
  - 10.1.1. Cerebral Hemodynamics
  - 10.1.2. Brain Damage in Cardiac Arrest
  - 10.1.3. Usefulness of Ultrasound in Resuscitation
  - 10.1.4. Usefulness of Ultrasound After Recovery of Spontaneous Circulation
- 10.2. Shock
  - 10.2.1. Ventricular Filling Pressure
  - 10.2.2. Cardiac Output
  - 10.2.3. Prediction of the Hemodynamic Response to Intravascular Volume Administration
  - 10.2.4. Ultrasound Assessment of Pulmonary Edema
  - 10.2.5. Ultrasound Search for Sources of Sepsis
- 10.3. Respiratory Failure
  - 10.3.1. Acute Respiratory Failure: Diagnosis
  - 10.3.2. Abrupt Hypoxemia in Patients on Mechanical Ventilation
  - 10.3.3. Monitoring of Recruitment Maneuvers
  - 10.3.4. Assessment of Extravascular Lung Water
- 10.4. Acute Renal Failure
  - 10.4.1. Hydronephrosis
  - 10.4.2. Lithiasis
  - 10.4.3. Acute Tubular Necrosis
  - 10.4.4. Doppler Ultrasound in Acute Renal Failure
  - 10.4.5. Bladder Ultrasound in Acute Renal Failure
- 10.5. Trauma
  - 10.5.1. FAST and e-FAST
  - 10.5.2. Ultrasound Assessment in Special Situations
  - 10.5.3. Hemodynamic Assessment Focused on Trauma
- 10.6. Stroke
  - 10.6.1. Justification
  - 10.6.2. Initial Assessment
  - 10.6.3. Ultrasound Appraisal
  - 10.6.4. Ultrasound-Guided Management

07

# Clinical Internship

Once the student has passed the theoretical period, they will have access to a practical stay of 3 weeks in a prestigious hospital center, where they will be accompanied at all times by a tutor designated specifically for them and will be part of an excellent multidisciplinary medical team.





“

*Develop your medical skills in a hospital center characterized by having the most updated materials and equipment”*

The practical phase of the Hybrid Professional Master's Degree in Clinical Imaging for Emergencies, Emergencies and Critical Care consists of a 3-week hospital stay in a prestigious center, from Monday to Friday with 8-hour working days with an assistant specialist. Thanks to this experience, the doctor will deal with real patients and, integrated in a multidisciplinary team, will acquire avant-garde techniques for diagnostic imaging for injuries produced in different parts of the body.

In this internship, the activities are aimed at developing and perfecting the skills necessary for the provision of health care in areas and conditions that require a high level of qualification, and which are oriented to the specific training for the exercise of the activity, in an environment of safety for the patient and high professional performance.

It is therefore a great opportunity to enhance medical skills by working in a completely real environment, where the use of new diagnostic imaging technologies is essential to ensure the recovery of patients in urgent clinical situations.

The practical teaching will be done with the accompaniment and guidance of professors and other fellow trainees that facilitate teamwork and multidisciplinary integration as transversal competencies for medical praxis (learning to be and learning to relate).

The procedures described below will be the basis of the specialization, and their realization will be subject to the center's own availability, its usual activity and workload, the proposed activities being the following:





Module	Practical Activity
<b>Imaging in Acute Respiratory and Cardiovascular Pathology</b>	Diagnose pulmonary or chest wall pathologies by means of imaging tests
	Detect the extent of respiratory cardiac insufficiency in a patient through the interpretation of imaging tests
	Diagnose thromboembolic disease through the use of clinical imaging
<b>Imaging in Acute Central Nervous System, Head and Neck Pathology</b>	Interpret imaging tests aimed at detecting a possible traumatic or vascular lesion in the central nervous system
	Select the most appropriate diagnostic test for the detection of each type of facial trauma
	Diagnose a thyroid tumor pathology based on the interpretation of the imaging test obtained
<b>Imaging in Acute Locomotor and Digestive System Pathology</b>	Establish the diagnosis of a bone fracture after interpretation of the corresponding imaging test
	Identification of foreign bodies according to their nature and their residence time in the tissues thanks to diagnostic tests
	Diagnosis of abdominal diseases such as appendicitis, pancreatitis or different types of hemorrhages
<b>Emergency Clinical Ultrasound</b>	Diagnose acute respiratory failure by appropriate imaging methods
	Perform ultrasound evaluation of trauma for special situations such as those caused by accidents

## Civil Liability Insurance

This institution's main concern is to guarantee the safety of the trainees and other collaborating agents involved in the internship process at the company. Among the measures dedicated to achieve this is the response to any incident that may occur during the entire teaching-learning process.

To this end, this entity commits to purchasing a civil liability insurance policy to cover any eventuality that may arise during the course of the internship at the center.

This liability policy for interns will have broad coverage and will be taken out prior to the start of the practical training period. That way professionals will not have to worry in case of having to face an unexpected situation and will be covered until the end of the internship program at the center.



## General Conditions of the Internship Program

The general terms and conditions of the internship agreement for the program are as follows:

**1. TUTOR:** During the Hybrid Professional Master's Degree, students will be assigned with two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned with an academic tutor whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both clinical and academic.

**2. DURATION:** The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.

**3. ABSENCE:** If the students does not show up on the start date of the Hybrid Professional Master's Degree, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

**4. CERTIFICATION:** Professionals who pass the Hybrid Professional Master's Degree will receive a certificate accrediting their stay at the center.

**5. EMPLOYMENT RELATIONSHIP:** The Hybrid Professional Master's Degree shall not constitute an employment relationship of any kind.

**6. PRIOR EDUCATION:** Some centers may require a certificate of prior education for the Hybrid Professional Master's Degree. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed.

**7. DOES NOT INCLUDE:** The Hybrid Professional Master's Degree will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed.

However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.

08

# Where Can I Do the Clinical Internship?

With the intention of preserving all the comforts and the adequate accessibility of all the students of this Hybrid Professional Master's Degree to the internship, TECH has selected a large number of hospital centers where they will be able to transfer to the real field all the knowledge acquired in the program







“

*Take your internship of this Hybrid Professional Master's Degree in a center that completely adapts to your personal needs”*



The student will be able to complete the practical part of this Hybrid Professional Master's Degree at the following centers:



Medicine

### Hospital HM Modelo

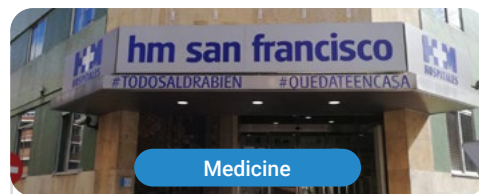
Country	City
Spain	La Coruña

Address: Rúa Virrey Osorio, 30, 15011, A Coruña

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Anaesthesiology and Resuscitation
- Spine Surgery



Medicine

### Hospital HM San Francisco

Country	City
Spain	León

Address: C. Marqueses de San Isidro, 11, 24004, León

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Update in Anesthesiology and Resuscitation
- Nursing in the Traumatology Department



Medicine

### Hospital HM Regla

Country	City
Spain	León

Address: Calle Cardenal Landázuri, 2, 24003, León

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Psychiatric Treatments Update in Minor Patients



Medicine

### Hospital HM Nou Delfos

Country	City
Spain	Barcelona

Address: Avinguda de Vallcarca, 151, 08023, Barcelona

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Aesthetic Medicine
- Clinical Nutrition in Medicine



Medicine

### Hospital HM Madrid

Country	City
Spain	Madrid

Address: Pl. del Conde del Valle de Súchil, 16, 28015, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Clinical Analysis
- Anaesthesiology and Resuscitation



Medicine

### Hospital HM Montepíncipe

Country	City
Spain	Madrid

Address: Av. de Montepíncipe, 25, 28660, Boadilla del Monte, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Child Orthopedics
- Aesthetic Medicine



Medicine

### Hospital HM Torrelodones

Country	City
Spain	Madrid

Address: Av. Castillo Olivares, s/n, 28250, Torrelodones, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Anaesthesiology and Resuscitation
- Hospital Pediatrics



Medicine

### Hospital HM Sanchinarro

Country	City
Spain	Madrid

Address: Calle de Oña, 10, 28050, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Anaesthesiology and Resuscitation
- Sleep Medicine



Medicine

### Hospital HM Puerta del Sur

Country: Spain  
City: Madrid

Address: Av. Carlos V, 70, 28938, Móstoles, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Pediatric Emergencies
- Clinical Ophthalmology



Medicine

### Hospital HM Vallés

Country: Spain  
City: Madrid

Address: Calle Santiago, 14, 28801, Alcalá de Henares, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Gynecologic Oncology
- Clinical Ophthalmology

09

# 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

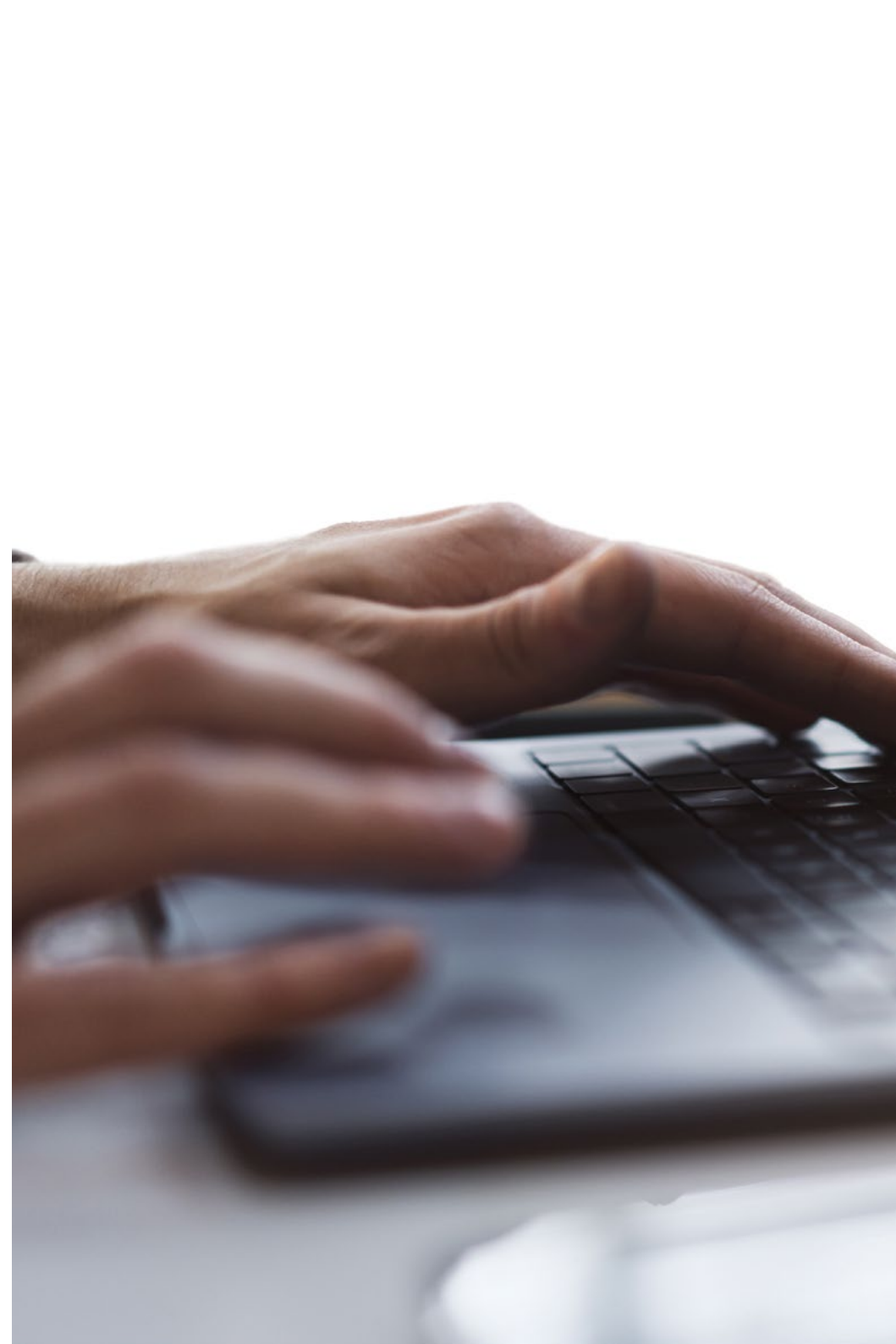
In TECH's study methodology, the student is the main protagonist.

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 quality of teaching, quality of materials, course structure and objectives is excellent. Not surprisingly, the institution became the best rated university by its students on the Trustpilot review platform, 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.

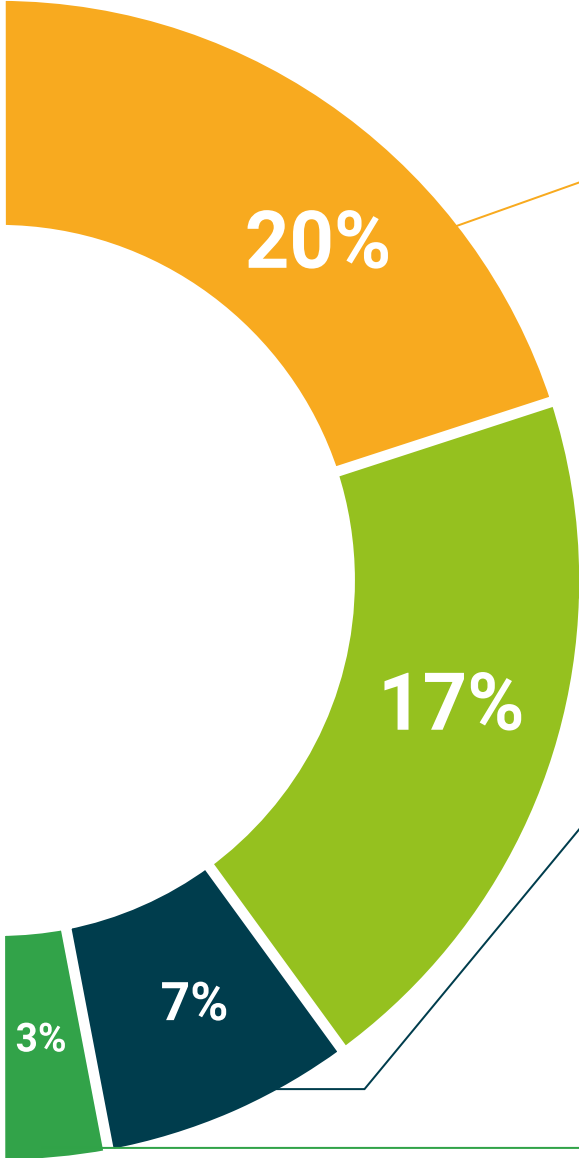
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### Additional Reading

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





**Case Studies**

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.



**Testing & Retesting**

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.



**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 for 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.



# 10 Certificate

The Hybrid Professional Master's Degree in Clinical Imaging for Emergency and Critical Care guarantees, in addition to the most rigorous and updated knowledge, access to a Hybrid Professional Master's Degree diploma 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 **Hybrid Professional Master's Degree diploma in Clinical Imaging for Emergency and Critical Care** 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.

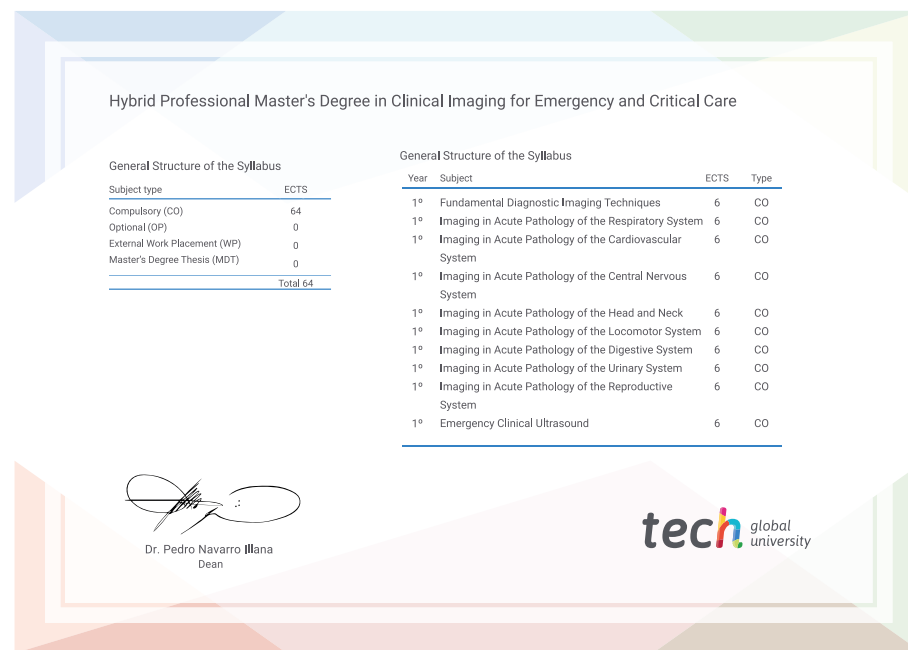
This **TECH Global University** private qualification, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Hybrid Professional Master's Degree in Clinical Imaging for Emergency and Critical Care**

Modality: **Hybrid (Online + Clinical Internship)**

Duration: **12 months**

Credits: **60 + 4 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.





## Hybrid Professional Master's Degree

Clinical Imaging for Emergency and Critical Care

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Global University

Credits: 60 + 4 ECTS

# Hybrid Professional Master's Degree

Clinical Imaging for Emergency and  
Critical Care