

# Postgraduate Certificate

## Diagnostic Imaging Techniques and Tools in the Forensic Context





## Postgraduate Certificate Diagnostic Imaging Techniques and Tools in the Forensic Context

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

Website: [www.techtute.com/us/nursing/postgraduate-certificate/diagnostic-imaging-techniques-tools-forensic-context](http://www.techtute.com/us/nursing/postgraduate-certificate/diagnostic-imaging-techniques-tools-forensic-context)

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# 01

# Introduction

Diagnostic Imaging Techniques and Tools play a crucial role in the forensic field by providing an accurate and detailed inside view of tissues and anatomical structures. These tools, which include Radiography, Computed Tomography (CT), Magnetic Resonance Imaging (MRI) and Ultrasonography, enable forensic investigators to obtain objective and irrefutable evidence of injury, disease, or even cause of death. In addition to revealing patterns of bone fractures, internal injuries, or bodily anomalies, these techniques can also reconstruct events and more deeply understand forensic cases. In this context, TECH has designed this comprehensive program, which is 100% online and fully flexible, as it allows access to its contents from anywhere and at any time.



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*Thanks to this complete program, you will be able to collaborate with forensic experts to solve accident and crime investigations. Don't miss this unique opportunity offered by TECH!"*

From X-Rays and CT Scans, to MRIs and Ultrasound Scans, these technologies allow coroners to obtain crucial information to determine the cause and nature of injuries, identify possible signs of trauma or disease, and reconstruct events that led to death. That is why it is so important to have highly qualified professionals in this field.

This is how this study was born, which will focus on providing graduates with a thorough understanding of the specialized terminology used in the field. Through lectures and practical exercises, they will be able to effectively apply the fundamental technical terms to communicate accurately in the forensic environment.

The program will also foster the development of critical skills such as observation, evaluation, experimentation, hypothesis formulation and verification, as well as technical reasoning. In this way, nurses will become familiar with examination protocols, image interpretation and forensic report writing, preparing them to approach cases with a rigorous scientific approach and analytical perspective.

Finally, the importance of conventional Radiology in the identification of cadavers and its application in living individuals will be highlighted. In addition, students will learn how imaging techniques, such as X-rays and CT scans, reveal crucial anatomical details that help determine the cause and nature of injuries, as well as reconstruct events related to death.

Therefore, this program in Diagnostic Imaging Techniques and Tools in the Forensic Context will be taught in a 100% online format, providing students with the flexibility to take it comfortably, anywhere and at any time, without the need to adjust to a preset schedule. Students will only need an electronic device with an Internet connection. Likewise, it will be based on the revolutionary Relearning methodology, pioneer in TECH, consisting in the reiteration of key concepts for an optimal and organic assimilation of the contents.

This **Postgraduate Certificate in Diagnostic Imaging Techniques and Tools in the Forensic Context** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ The development of practical cases presented by experts in Diagnostic Imaging Techniques and Tools in the Forensic Context
- ♦ 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



*Upgrade your skills in Diagnostic Imaging Techniques! You will be able to visualize internal structures with high resolution, an invaluable tool in forensic investigation"*

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*You will use conventional radiology in the identification of corpses, highlighting its relevance in the reconstruction of events and in the determination of possible causes of death"*

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 update your technical vocabulary related to Radiology, Computed Tomography, Magnetic Resonance Imaging and other imaging modalities.*

*You will gain key skills, such as the ability to observe, evaluate, experiment, formulate and test hypotheses, as well as develop sound technical reasoning.*



# 02 Objectives

The main objective of this program is to provide nurses with comprehensive and specialized qualifications in the use and application of imaging technologies for criminal and medical-legal investigation. In this way, professionals will be provided with the theoretical and practical knowledge necessary to adequately understand various diagnostic imaging modalities, from X-rays to MRI scans, in order to identify and analyze pathologies, injuries and causes of death in individuals.





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*You will be equipped with the theoretical knowledge and practical skills necessary to effectively use imaging technologies and tools in the resolution of forensic cases”*



## General Objectives

- ♦ Identify and recognize the different types of radiological equipment and understand their uses and importance in the legal and forensic context
- ♦ Determine the adaptation of each technique to each situation, based on the affinity of the technique to the specific legal case
- ♦ Broaden the knowledge in forensic diagnostic medicine, through the extensive follow-up of the elements that compose an investigation
- ♦ Establish the main role of forensic radiology in the final report of the death trajectory and the judicial investigation





## Specific Objectives

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- ◆ Learn the terminology that is used
- ◆ Develop the ability to observe, evaluate, experiment, formulate and verify hypotheses and technical reasoning
- ◆ Determine the importance of conventional radiology for the identification of corpses
- ◆ Establish its application in living individuals



*You would develop critical skills in the interpretation of images, promoting the capacity for observation, evaluation, experimentation and technical reasoning"*

03

# Course Management

The teaching team is made up of highly qualified and experienced professionals in the field of Forensic Radiology and Forensic Medicine. In fact, these mentors not only have a deep theoretical knowledge of Diagnostic Imaging Technologies, but also a vast practical experience in their application in forensic situations. Furthermore, their expertise ranges from the interpretation of radiological images, to the reconstruction of traumatic events and the identification of specific injuries related to the cause of death.





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*Teachers on this program will develop your critical skills, fostering a rigorous and scientific approach to solving forensic cases using Diagnostic Imaging Techniques”*

## Management



### Dr. Ortega Ruiz, Ricardo

- PhD in Biomedical Engineering from the Polytechnic University of Madrid, specializing in Diagnostic Imaging.
- Director of the Laboratory of Archaeology and Forensic Anthropology of the Institute of Professional Training in Forensic Sciences.
- Investigator of Crimes against Humanity and War Crimes in Europe and the Americas
- Judicial Expert in Human Identification
- International Observer in Drug Trafficking Crimes in Iberoamerica
- Collaborator in police investigations for the search of missing persons in foot or canine tracking with Civil Protection
- Instructor of adaptation courses in Basic Scale to Executive Scale aimed at the Scientific Police
- Master's Degree in Forensic Sciences applied to the Search for Missing Persons and Human Identification Cranfield University
- Master's Degree in Archeology and Heritage with the Specialty of Forensic Archeology for the Search of Missing Persons in Armed Conflict



## Professors

### Ms. Leyes Merino, Valeria Alejandra

- ◆ Conventional Radiology Technician in High Imaging at Hospital Teodoro J. Schestakow
- ◆ Radiology Technician at Hospital Teodoro J. Schestakow
- ◆ Conventional Radiology Technician in High Imaging
- ◆ Expert in Densitometry at the Nuclear Medicine Foundation (FUESMEN)
- ◆ Radiology Technician at the Red Cross

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*Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice"*

# 04

# Structure and Content

A program in Diagnostic Imaging Techniques and Tools in the Forensic Context encompasses a variety of content designed to provide students with a comprehensive understanding of how to effectively apply these technologies in forensic investigations and procedures. This content includes the study of terminology used in the forensic field, an understanding of the physical and technical principles behind the various imaging modalities, such as X-rays, CT scans and MRI scans.



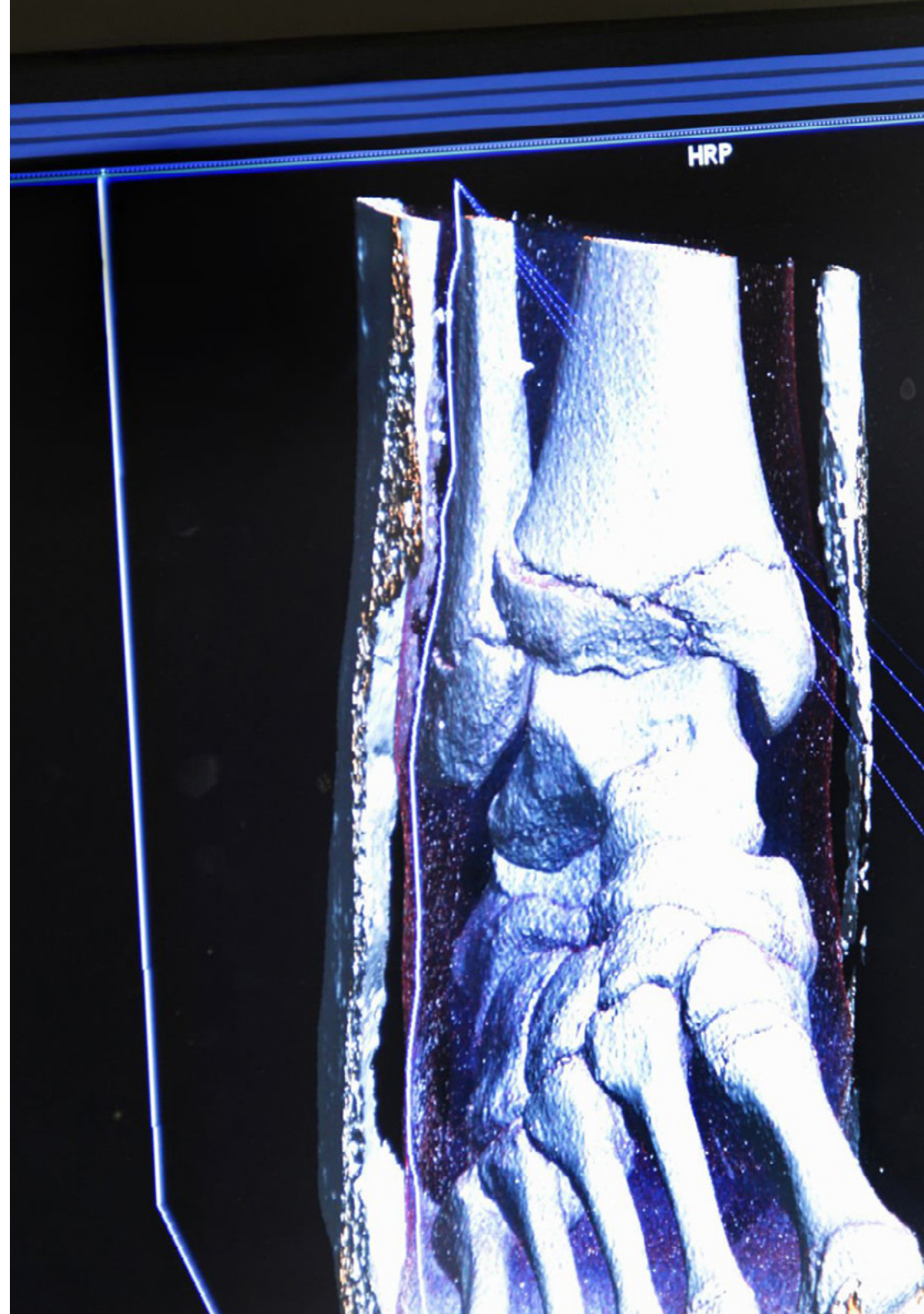


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*You will identify various types of traumatic injuries, reconstruction of events and interpretation of radiological findings in the forensic context, all thanks to an extensive library of innovative multimedia resources”*

## Module 1. Diagnostic Imaging Techniques and Tools in the Forensic Context

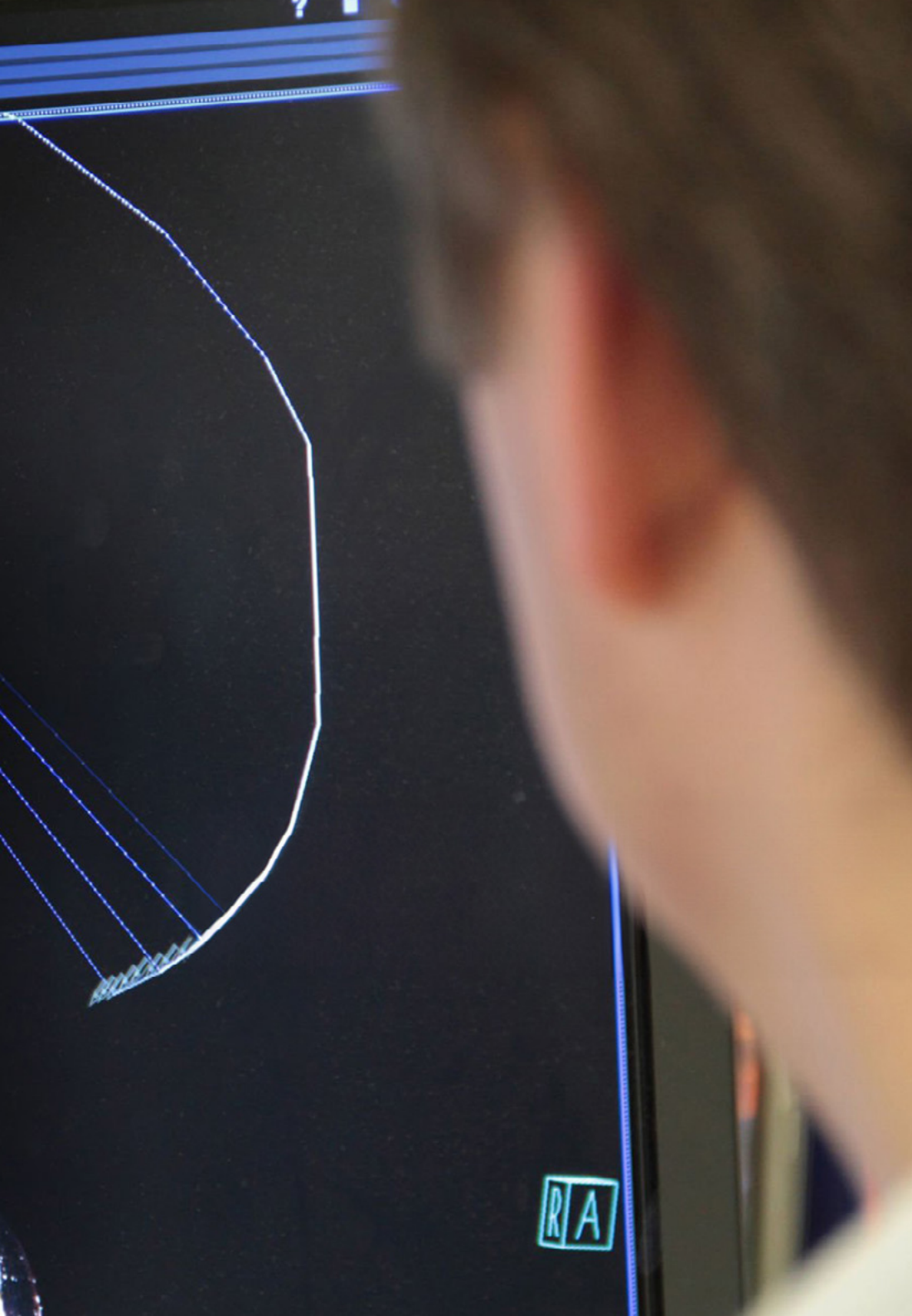
- 1.1. Radiological Physics and its Application in the Forensic Context
  - 1.1.1. Physics Applied to Forensic Radiology
  - 1.1.2. Radiological Characterization in the Forensic Context
  - 1.1.3. Structure of Matter
- 1.2. Operation of Equipment in the Forensic Context
  - 1.2.1. X-ray Imaging System
  - 1.2.2. X-ray Tube
  - 1.2.3. Diagnostic Ultrasound
- 1.3. Forensic Use of Radiology
  - 1.3.1. Computed Tomography (CT)
  - 1.3.2. Conventional X-rays (RX)
  - 1.3.3. Ultrasound (UI)
  - 1.3.4. Magnetic Resonance
- 1.4. Forensic Radiobiology
  - 1.4.1. Human Biology
  - 1.4.2. Radiobiology
  - 1.4.3. Molecular and Cellular Radiobiology
- 1.5. Dosimetric Quantities in Forensic Contexts
  - 1.5.1. Radiation Protection
  - 1.5.2. Ionization
  - 1.5.3. Arousal
  - 1.5.4. Fluorescence
- 1.6. Digital Imaging in Forensics
  - 1.6.1. The Digital Image
  - 1.6.2. Visualization and Understanding of Images in the Forensic Field
  - 1.6.3. Artifacts



- 1.7. Forensic Computed Tomography
  - 1.7.1. Operation
  - 1.7.2. Scope
  - 1.7.3. Terminology
- 1.8. Conventional Forensic Radiobiology Equipment
  - 1.8.1. Operation
  - 1.8.2. Scope
  - 1.8.3. Terminology
- 1.9. Ultrasound in Forensic Medicine
  - 1.9.1. Operation
  - 1.9.2. Scope
  - 1.9.3. Terminology
- 1.10. Magnetic Resonance in Expert Investigation
  - 1.10.1. Operation
  - 1.10.2. Scope
  - 1.10.3. Terminology



*Through this innovative syllabus, you will emphasize the scientific rigor and objectivity necessary to contribute effectively to the resolution of judicial and medico-legal cases"*



# 05 Methodology

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

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



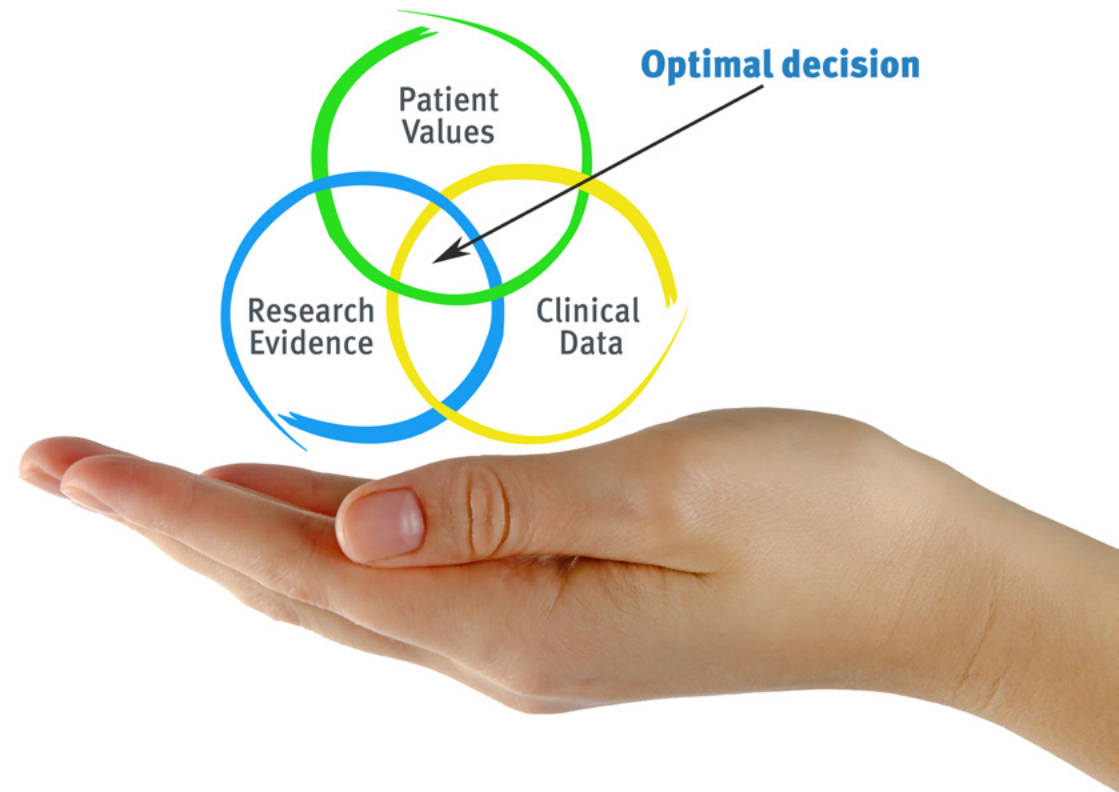
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*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## At TECH Nursing School we use the Case Method

In a given situation, what should a professional do? 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. Nurses learn better, faster, and more sustainably over time.

*With TECH, nurses can experience a learning methodology that is shaking the foundations of traditional universities around the world.*



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

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

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

1. Nurses 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 nursing professional to better integrate knowledge acquisition into the hospital setting or primary care.
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 case studies with a 100% online learning system based on repetition combining a minimum of 8 different elements in each lesson, which is a real revolution compared to the simple study and analysis of cases.



*The nurse 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 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 we have trained more than 175,000 nurses with unprecedented success in all specialities regardless of practical workload. 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 really 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.



### Nursing 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 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 them as many times as you want.



### 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 suggesting that observing third-party experts can be useful.

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 Diagnostic Imaging Techniques and Tools in the Forensic Context guarantees, in addition to the most accurate and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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

This private qualification will allow you to obtain a **Postgraduate Certificate in Diagnostic Imaging Techniques and Tools in the Forensic Context** 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: **Postgraduate Certificate in Diagnostic Imaging Techniques and Tools in the Forensic Context**

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  
online training  
development language  
virtual classroom



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