

Postgraduate Certificate

Radiology of Firearms and Explosives Trauma in Forensic Investigation



Postgraduate Certificate Radiology of Firearms and Explosives Trauma in Forensic Investigation

- » 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/radiology-firearms-explosives-trauma-forensic-investigation

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01

Introduction

A study by the United Nations World Organization estimates that more than 800 people die every day as a result of gun violence. A large number of these homicides go unpunished due to the lack of a thorough investigation, which generates more suffering for the families of the victims. For this reason, this international organization asks nursing personnel to carry out an interdisciplinary collaboration that guarantees an exhaustive and precise evaluation of the cases. In view of this, professionals are required to inquire into the characterization of the wounds and trajectory of the firearm projectile. To help them, TECH implements a program that will deal with this subject through a convenient 100% online modality.



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Through this 100% online program, you will be up to date on the latest imaging techniques and maintain chain-of-custody security of radiological images”

Industry 4.0 and its technological advancements have had a positive impact for Forensic Radiology. A clear example is Ultrasound, which provides a quick and non-invasive initial assessment to detect potentially life-threatening injuries (such as internal bleeding or organ injuries). This tool is especially useful in the case of injuries caused by fragments of firearms or explosives, as it identifies the presence and location of foreign bodies inside individuals. In this way, professionals obtain high-resolution images useful for analyzing the reasons that led to the death of individuals. In turn, these radiological findings are of vital importance both during forensic investigations and legal proceedings.

In this scenario, TECH develops a very complete program in Radiology of Firearms and Explosives Trauma in Forensic Investigation. Its purpose is to keep nurses at the technological forefront, while strengthening their skills to provide assistance during autopsies or radiological imaging. The academic itinerary will provide a detailed classification of firearms and explosives, and will also present the most common injuries in both cases. Likewise, the didactic materials will focus on the operation of the most innovative radiological tools, with emphasis on Axial Computed Tomography and Virtual Autopsy. This will enable professionals to ensure that cadavers are correctly positioned during radiographic procedures, reducing unnecessary radiation exposure.

The program is delivered completely online so that graduates can customize their study time. TECH uses its innovative learning system: Relearning. This allows professionals to consolidate the concepts of the syllabus in a progressive and natural way, without the need to resort to techniques such as memorizing. To access the Virtual Campus, all they need is an electronic device with an Internet connection. In this way, they will be able to enjoy the most dynamic educational resources on the market.

This **Postgraduate Certificate in Radiology of Firearms and Explosives Trauma in Forensic Investigation** 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 Forensic Radiology
- ♦ 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



You will gain a solid understanding of Radiological Assessment of blast injuries through 150 hours of the best digital teaching”

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You will delve into the importance of Ultrasound to determine the projectile of the firearm”

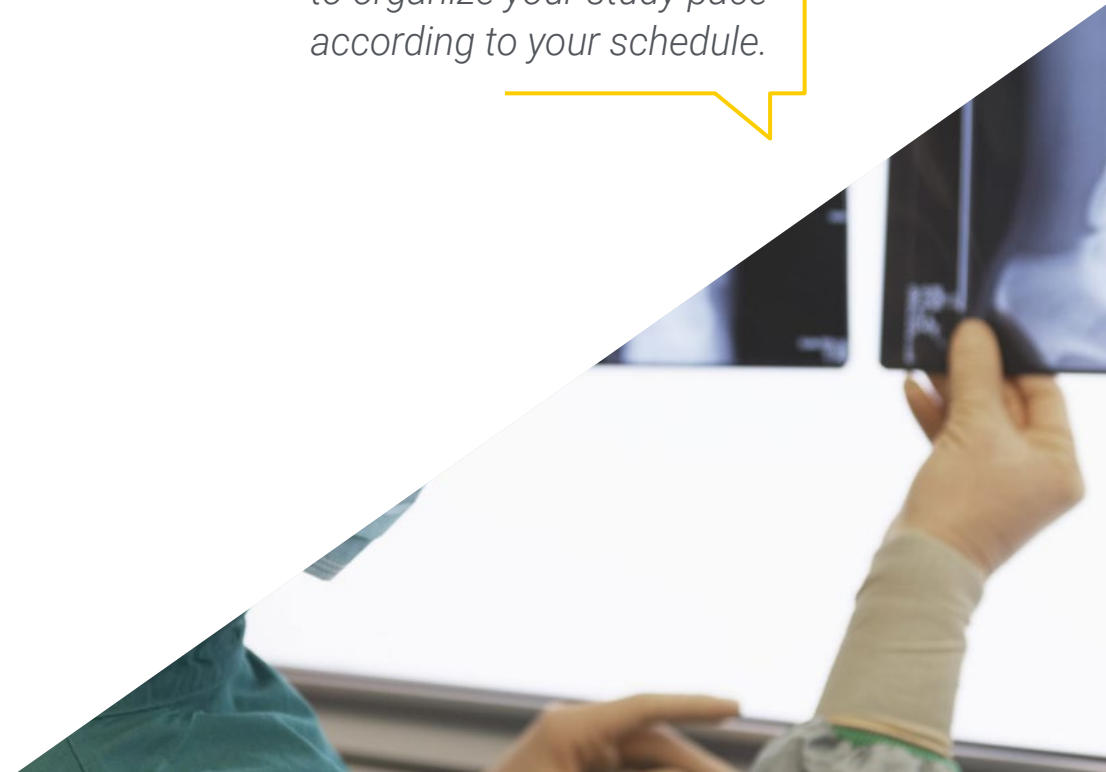
The program's teaching staff includes professionals from the sector who contribute their work experience to this specializing program, as well as renowned specialists from leading societies and prestigious universities.

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 delve into the Radiological Assessment of injuries caused by explosives.

Take advantage of the benefits of the Relearning methodology, which will give you the opportunity to organize your study pace according to your schedule.



02

Objectives

Through this program, graduates will have a deep understanding of the fundamental principles of Radiology of Firearms and Explosives Trauma in Forensic Investigation. Likewise, they will be up to date with the latest radiographic techniques, such as Ultrasound or Computerized Axial Tomography. In this way, professionals will optimize their praxis and provide better attention to cadavers during radiological procedures. They will also develop skills to observe specific injury patterns such as penetrating trauma, bone fragmentation and tissue damage. In addition, they will enhance their communication skills to document radiological findings and collaborate interdisciplinary with other professionals.



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You will achieve your most ambitious career goals with the support of TECH's didactic tools, including explanatory videos”



General Objectives

- ♦ Determine the use of radiology as an auxiliary method in the judicial process of crimes
- ♦ Identify injuries, mechanisms of injury and causes of death with Firearms
- ♦ Identify injury patterns and causes of death with explosive elements
- ♦ Correctly interpret the different types of radiological techniques according to need, tissue condition and availability





Specific Objectives

- ◆ Identify the different types and patterns of injuries that can be generated by firearm projectiles and explosives
- ◆ Determine the different injuries and systemic compromises that can be generated by firearm projectiles and explosives
- ◆ Identify through radiodiagnostic means injured areas
- ◆ Interpret the role of radiology in the legal world

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A complete professional growth process that will enable you to acquire the skills of an expert and compete among the best in the industry”

03

Course Management

In order to provide high quality instruction that benefits graduates and prepares them to face challenges in their careers, TECH has a first class teaching staff. Composed of highly specialized professionals in Forensic Radiology, this group stands out for its extensive career, where they have been part of renowned hospitals. Therefore, they share in the academic materials their solid knowledge in this field to offer an enriching perspective and updated information on the subject. They will motivate graduates to reach their full potential by providing guidance, support and constructive feedback.





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The faculty of this program is comprised of nurses specialized in Forensic Radiology to provide you with the most professionally applicable knowledge in this area”

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

Dr. Galezo Chavarro, Diana

- ◆ Technician Responsible of the South Regional of the National Institute of Legal Medicine and Forensic Sciences
- ◆ Forensic specialist in the Regional Clinical, Psychology, Odontology and Forensic Psychiatry Group
- ◆ Expert in support to the certification process in Clinical Forensics
- ◆ Expert in Forensic Sciences and Probation Technique at the Libre University
- ◆ Expert in Search for Missing Persons in Iberoamerica

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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

This program will focus on the analysis of radiological images in trauma caused by firearms and explosives. The didactic materials will address the mechanics of projectiles, as well as their variants depending on aspects such as distance, trajectory or number of impacts. In this sense, the syllabus will delve into the typology of explosives so that graduates can recognize both their radius of action and their injurious capacity on human bone tissue. In addition, the program will provide the latest advances in radiographic tools (including Ultrasound, Computerized Axial Tomography or Virtual Autopsy).

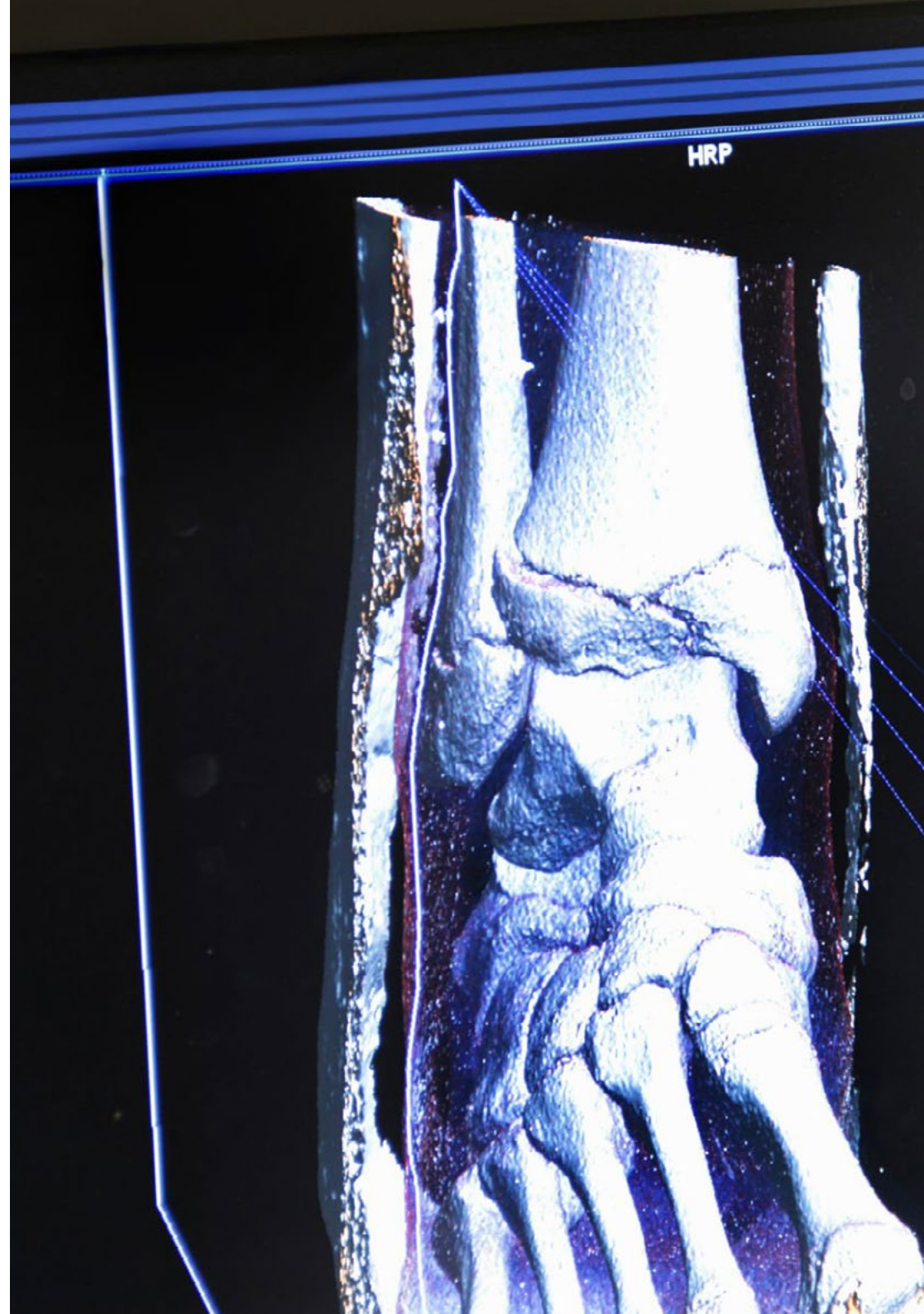


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The faculty has designed hours of additional content for you to expand each section of the syllabus in a personalized way”

Module 1. Radiology of Firearms and Explosives Trauma in Forensic Investigation

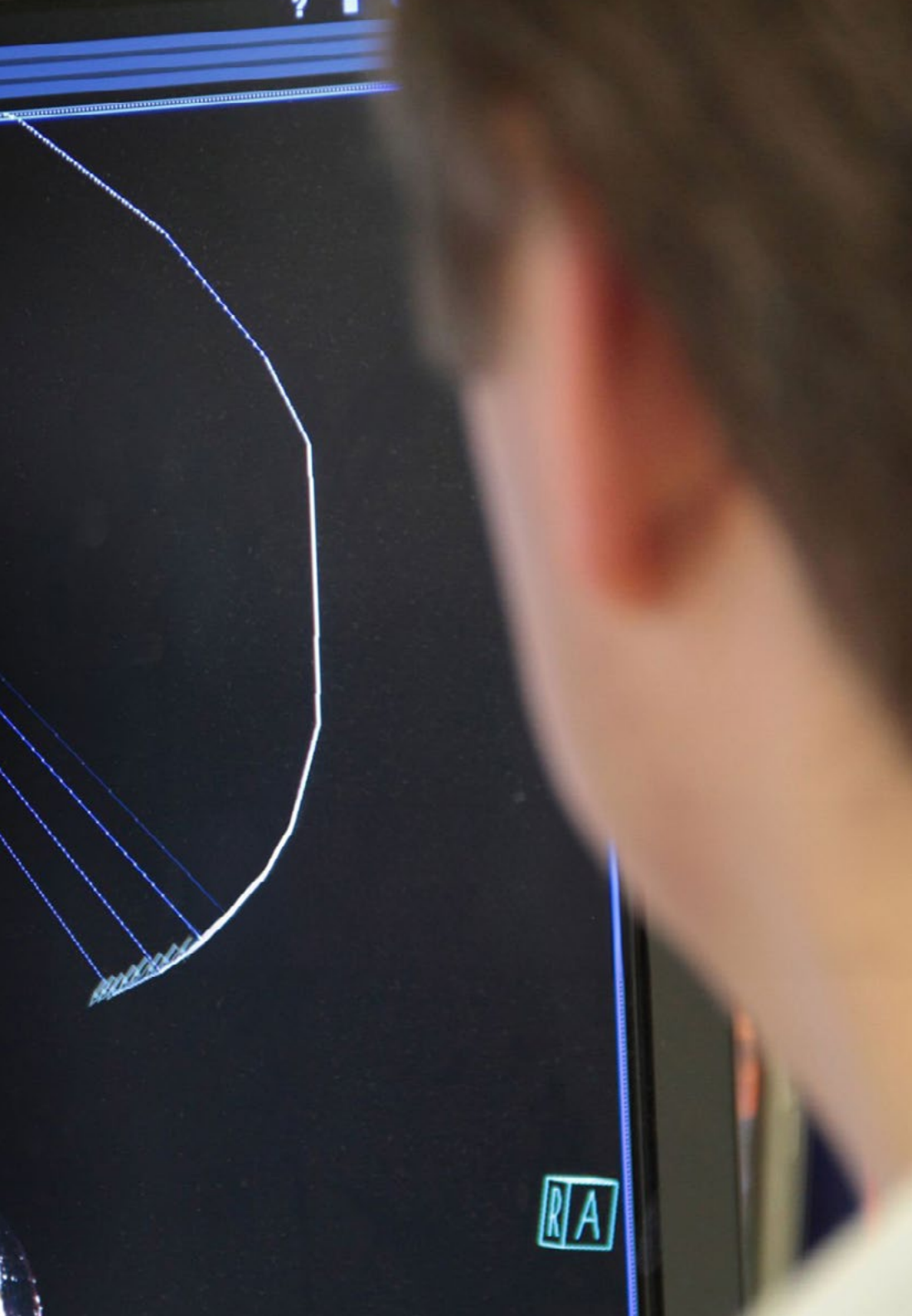
- 1.1. Firearms and Projectiles
 - 1.1.1. Classification of Firearms
 - 1.1.2. Elements that Compose a Firearm
 - 1.1.3. Structure of the Firearm
 - 1.1.4. Firearm Projectiles
- 1.2. Characterization of Wounds and Firearm Projectile Trajectory
 - 1.2.1. Entrance Orifice
 - 1.2.2. Trajectory
 - 1.2.3. Outlet Orifice
- 1.3. X-ray Technique and Firearm Projectiles
 - 1.3.1. Number of Projectiles
 - 1.3.2. Probable Trajectory
 - 1.3.3. Probable Caliber
 - 1.3.4. Type of Firearm
- 1.4. Axial Tomography and Firearm Projectiles
 - 1.4.1. Number of Projectiles
 - 1.4.2. Trajectory
 - 1.4.3. Type of Weapons Used
- 1.5. Ultrasound and Firearm Projectile
 - 1.5.1. Number of Projectiles
 - 1.5.2. Trajectory
 - 1.5.3. Type of Weapons Used
- 1.6. Virtual Autopsy in Deaths Caused by Firearm Projectile Wounds
 - 1.6.1. Simple Radiography
 - 1.6.2. Computerized Axial Tomography
 - 1.6.3. Magnetic Resonance



- 1.7. Explosives
 - 1.7.1. Typologies of Explosive Elements
 - 1.7.2. Categorization
 - 1.7.3. Mechanics of Explosions
- 1.8. Classification of Blast Injuries
 - 1.8.1. Primary
 - 1.8.2. Secondary
 - 1.8.3. Tertiary
 - 1.8.4. Quaternary
- 1.9. Radiodiagnostic Imaging in the Search for and Retrieval of Evidence
 - 1.9.1. Simple Radiography
 - 1.9.2. Computerized Axial Tomography
 - 1.9.3. Magnetic Resonance
- 1.10. Radiological Assessment of Blast Injuries
 - 1.10.1. Cranial
 - 1.10.2. Cervical
 - 1.10.3. Chest
 - 1.10.4. Abdomen
 - 1.10.5. Extremities



Your professional goals will be closer when you complete this program. 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.



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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.

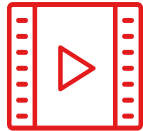
Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

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 adapted in 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

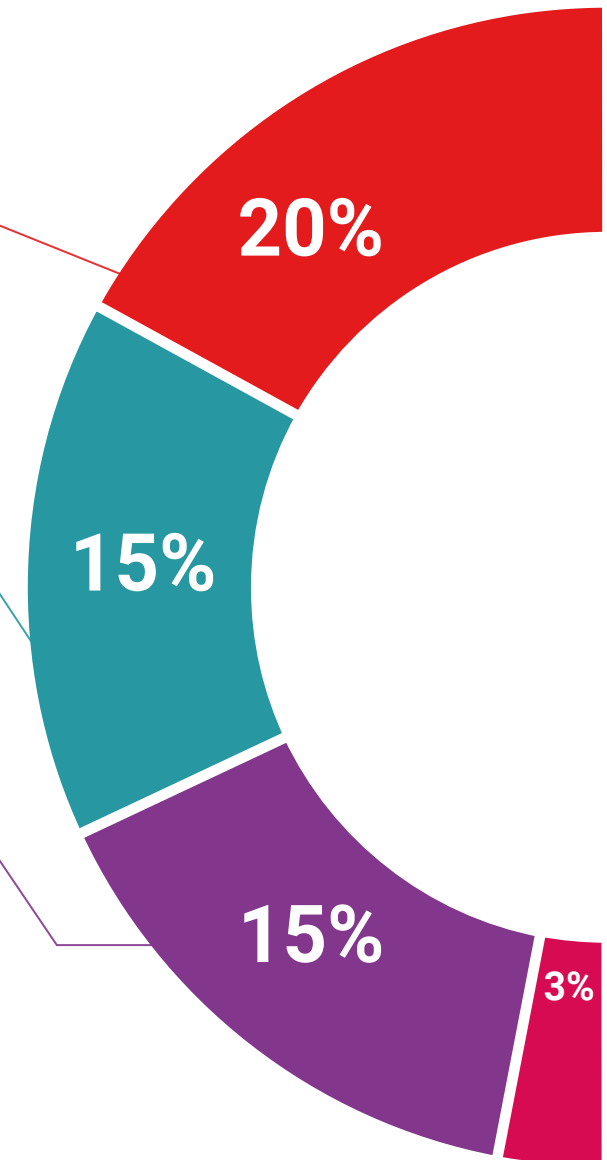
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

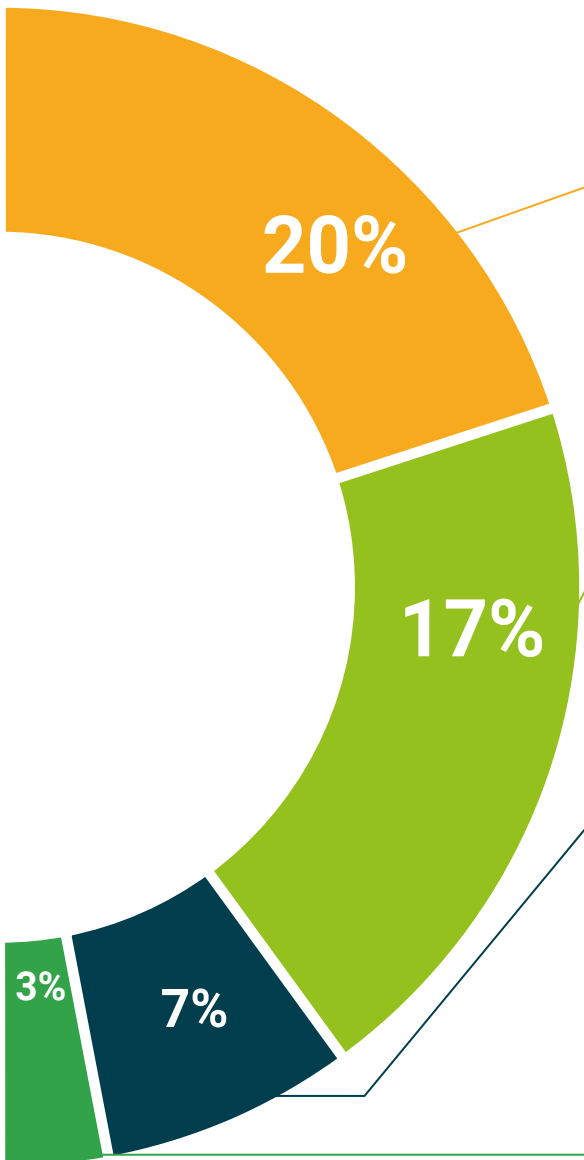
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



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

The student's knowledge is periodically assessed and re-assessed throughout the program, through evaluative and self-evaluative activities and exercises: in this way, students can check how they are doing in terms of 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 Radiology of Firearms and Explosives Trauma in Forensic Investigation 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 Radiology of Firearms and Explosives Trauma in Forensic Investigation** 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 Radiology of Firearms and Explosives Trauma in Forensic Investigation**

Modality: **online**

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Accreditation: **6 ECTS**



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



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