

Postgraduate Diploma

Forensic Radiology in Bone Trauma



Postgraduate Diploma Forensic Radiology in Bone Trauma

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Accreditation: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-forensic-radiology-bone-trauma

Index

01

Introduction

p. 4

02

Objectives

p. 8

03

Course Management

p. 12

04

Structure and Content

p. 16

05

Methodology

p. 22

06

Certificate

p. 30

01

Introduction

In a recent report, the United Nations shares its concern over the rising rate of organized crime. The study reflects that these criminal acts have taken the lives of more than 700,000 people on an international scale, while recognizing that a large number of human bodies remain unidentified to this day. In this situation, physicians play a key role in detecting bone trauma and clarifying investigations into cases of violent deaths. It is therefore vital that they keep abreast of the latest technological trends in this field. Therefore, TECH is developing a pioneering online university program that will delve into the most advanced tools for locating internal injuries.





With this Postgraduate Diploma, based on Relearning, you will address the significant radiological images to clarify causes of deaths during criminal investigations"

More and more healthcare entities are calling for the incorporation of specialists with a high degree of specialization in Radiology of Trauma with firearms and explosives. These physicians are in charge of analyzing and interpreting radiological images to evaluate internal injuries caused by the impact of projectiles from objects such as guns, rifles, rifles and explosives. In this way, they determine the trajectory of the bullets inside the victim's body and the sequence of events that led to the victim's death. In addition, these professionals translate their findings into detailed reports that can be presented as scientific evidence in different legal proceedings.

For this reason, TECH implements a Postgraduate Diploma in Forensic Radiology in Bone Trauma that will delve into the various injury patterns generated by firearms, as well as the characterization of wounds. The didactic materials will delve into the most innovative radiological techniques for the study of blunt weapon injuries. Therefore, experts will acquire advanced skills to master modern tools such as Magnetic Resonance Imaging, Computerized Axial Tomography or X-rays. At the same time, the syllabus will deal with the Virtual Autopsy procedure, so that graduates can examine the tissues and internal organs of the body without the need to make incisions or physical dissections on the corpses.

TECH offers a 100% online educational environment, tailored to the needs of health professionals seeking to advance their careers. In addition, it uses the revolutionary *Relearning* methodology, consisting of the repetition of key concepts to fix knowledge and facilitate learning. Therefore, the combination of flexibility and a robust pedagogical approach makes the university program highly accessible. The only thing experts will need is a device with Internet access to enter the virtual platform and enjoy an educational experience that will take their professional practice to a higher level.

This **Postgraduate Diploma in Forensic Radiology in Bone Trauma** 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



The 100% online methodology of this university program will allow you to obtain an optimized learning without leaving your own home"

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You will handle Computed Axial Tomography and obtain detailed images in cross sections of the body to detect even internal hemorrhages"

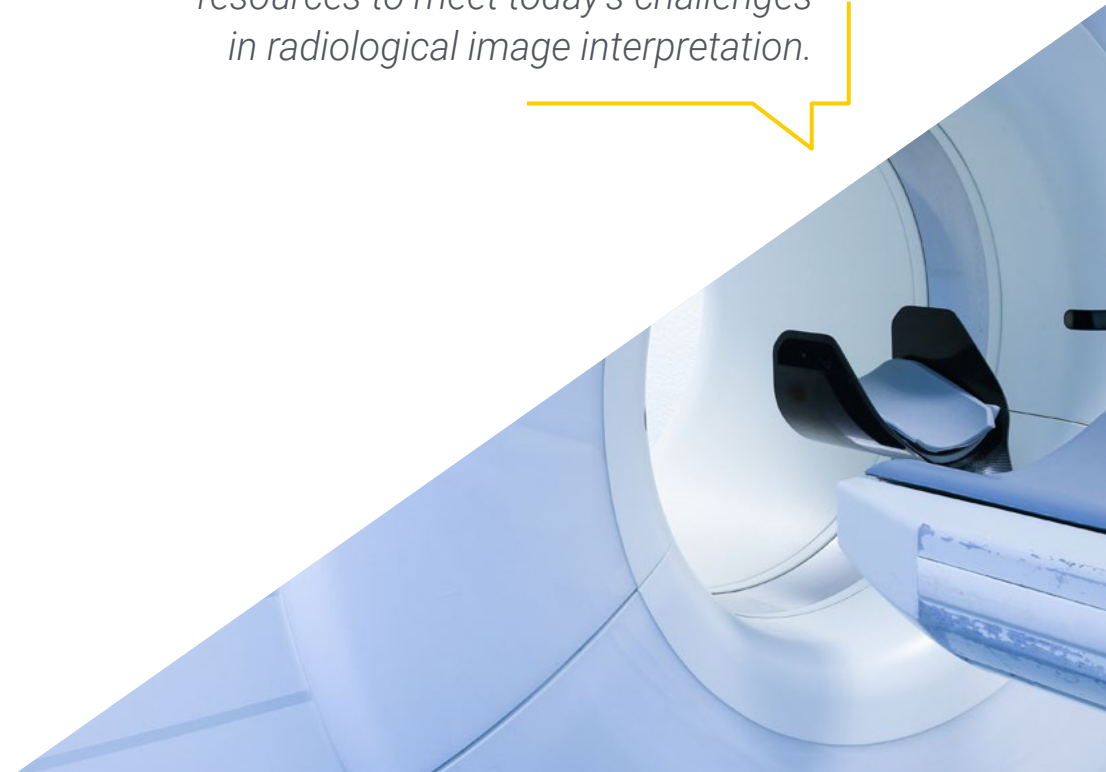
The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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, the student will be assisted by an innovative interactive video system created by renowned and experienced experts

You will have at your disposal the most advanced radiological techniques for the study of injuries caused by sharp weapons. You will make the most accurate diagnoses.

This program will make you a more complete professional by equipping you with the most effective resources to meet today's challenges in radiological image interpretation.



02 Objectives

Thanks to this university program, medical professionals will optimize both their accuracy and efficiency in the diagnosis of Bone Trauma in the forensic context. In this same line, specialists will acquire advanced skills to correctly handle innovative technological tools such as CT scans, X-rays or MRIs. In this way, experts will be highly specialized in the interpretation of radiological images and will be able to establish the extent of lesions in the organic tissues of individuals. This will enable them to provide expert reports based on radiological findings to help clarify forensic investigations.



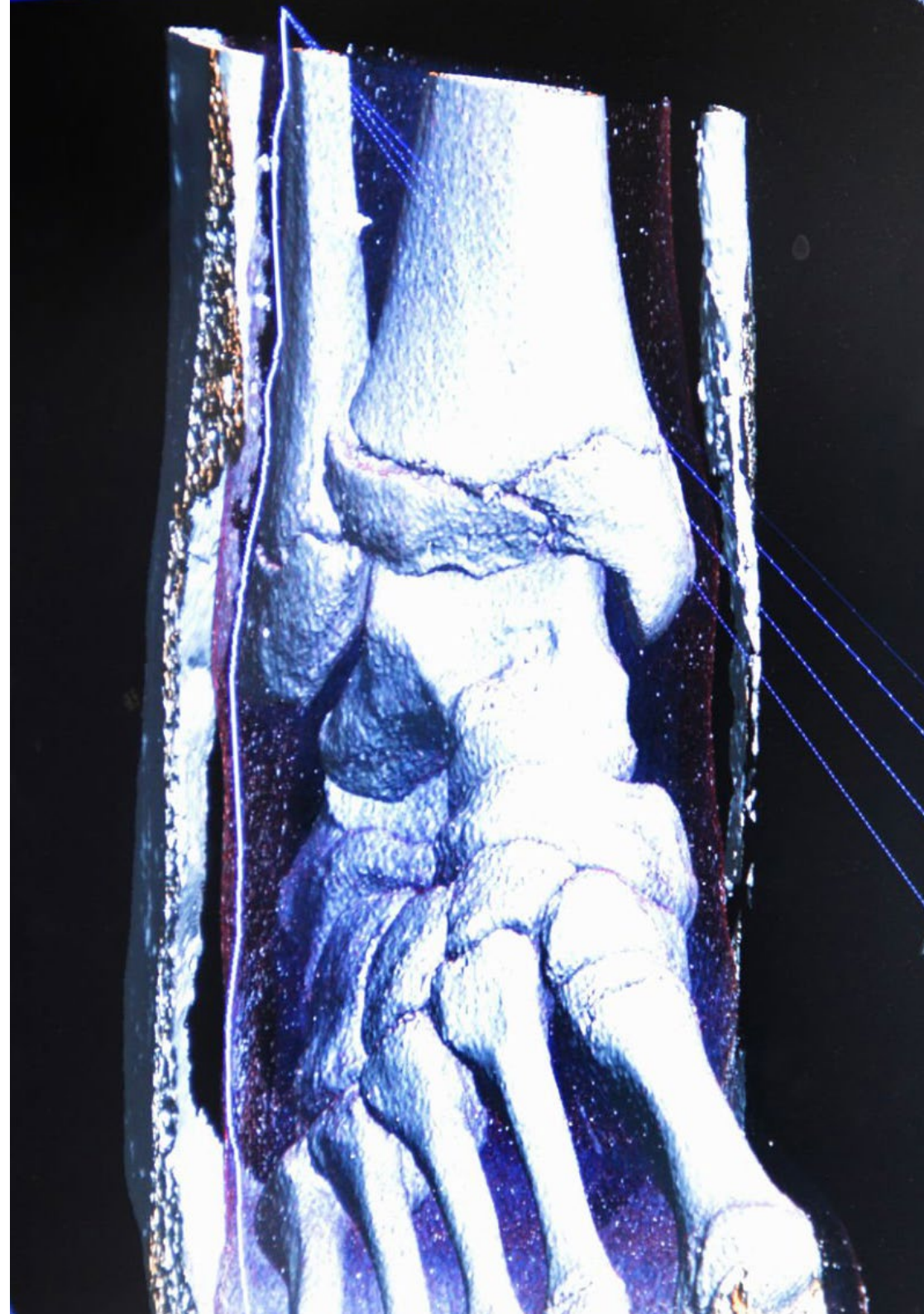
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You will develop advanced competencies to evaluate bone injuries and determine if they are consistent with the version of events presented in a forensic investigation"



General Objectives

- ◆ Identify and recognize the different types of elements that generate blunt injuries in the individual
- ◆ Evaluate the physical and mechanical characterization behind each element to know how it works
- ◆ Recognize the different injury characteristics based on the type of weapon, mechanical application and nature of the tissue
- ◆ Define the extent of injuries to the tissues of the individual
- ◆ Identify and recognize the different types of elements that generate blunt injuries in the individual
- ◆ Evaluate the physical and mechanical characterization behind each sharp element to know how it works
- ◆ Recognize the different injury characteristics based on the type of weapon, mechanical application in the individual and the nature of tissue damage
- ◆ Define the extent of tissue injuries to the individual: superficial injuries, deep injuries and amputations
- ◆ 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

Module 1. Forensic Radiological Techniques of Bone and Dental Trauma with Blunt Objects

- ♦ Assess the difference in injury between weapon, object, structure and blunt mechanism
- ♦ Recognize mixed injury patterns, such as those caused by short-blunt elements
- ♦ Fundamentals of radiodiagnostic techniques in deceased individuals from which no information can be obtained without altering the organic tissue, either because it is not possible to have access to the interior of the tissue, as in cases of charring or in alterations of human decomposition or because it cannot be altered for further studies
- ♦ Provide support to other disciplines to characterize the injuries of the individual

Module 2. Forensic Radiology of Trauma with Sharp and Cutting Elements

- ♦ Evaluate the difference in injury between weapon, object and cutting structure
- ♦ Recognize, in conjunction with the previous topic, mixed injury patterns, such as those caused by short-concussive elements
- ♦ Support the application of radiodiagnostic techniques in individuals in order to know the extent of the injuries and in deceased persons from whom no information can be obtained without altering the organic tissue
- ♦ Provide support to other disciplines to characterize the injuries of the individual

Module 3. Radiology of Firearms and Explosives Trauma in Forensic Investigation

- ♦ 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



You will increase your potential in the field of Forensic Radiology in Bone Trauma in only 450 hours thanks to this university program"

03

Course Management

In line with its philosophy of providing the most complete and updated educational experiences in the academic market, TECH carries out a thorough selection process to choose its teaching staff. For the design and delivery of this Postgraduate Diploma, the institution counts on authentic references in the field of Forensic Radiology in Bone Trauma. These specialists have a solid career of research and professional application in this field. At the same time, they keep abreast of all the technological advances in this discipline to provide services of excellent quality. Therefore, they will offer first class didactic materials.



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You will have the opportunity to consult your doubts directly with the teaching team, who will provide you with tutoring tailored to your own demands”

Management



Dr. Ortega Ruiz, Ricardo

- Director of the Laboratory of Archeology and Forensic Anthropology of the Institute of Forensic Sciences
- Investigator of Crimes against Humanity and War Crimes
- 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. Lini, Priscila

- ◆ Director of the Laboratory of Bioanthropology and Forensic Anthropology of Mato Grosso do Sul
- ◆ Legal Advisor at the Federal Prosecutor's Office at the Federal University of Latin American Integration
- ◆ Technical Collaborator at the Public Defender's Office of the State of Mato Grosso do Sul
- ◆ Master's Degree in Law from the Pontifical Catholic University of Paraná
- ◆ Bachelor's Degree in Biological Sciences from Instituto Prominas
- ◆ Law Degree from State University of Western Paraná
- ◆ Specialization in Physical and Forensic Anthropology from the Institute of Professional Training in Forensic Sciences

04

Structure and Content

Comprised of 3 comprehensive modules, this Postgraduate Diploma will provide specialists with a holistic approach to Forensic Radiology in Bone Trauma. The syllabus will delve into the injury mechanics of blunt elements, allowing physicians to determine the force and direction of the impact that caused the injury. In this sense, the syllabus will delve into the most innovative radiobiological techniques, among which Computed Axial Tomography or X-rays stand out. In this way, physicians will develop advanced skills to identify traumatic bone injuries (such as dislocations, traumatic injuries or firearm wounds).





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A comprehensive update on Radiological Imaging in the search and retrieval of evidence that will optimize your medical practice"

Module 1. Forensic Radiological Techniques of Bone and Dental Trauma with Blunt Objects

- 1.1. Classification of Blunt Profile Injury Elements
 - 1.1.1. Blunt Weapons
 - 1.1.2. Blunt Objects
 - 1.1.3. Blunt Mechanical Force Injuries
 - 1.1.4. Structural Injuries
 - 1.1.5. Short Blunt Injuries
- 1.2. Injury Mechanics of Blunt Elements
 - 1.2.1. Blunt Weapons
 - 1.2.2. Blunt Objects
 - 1.2.3. Blunt Mechanical Force Injuries
 - 1.2.4. Injuries Through Structures
 - 1.2.5. Short Blunt Injuries
- 1.3. Injury Typologies of Blunt weapons
 - 1.3.1. Superficial Injuries
 - 1.3.2. Deep Injuries
 - 1.3.3. Total or Partial Amputation Injuries
- 1.4. Types of Injuries Caused by Blunt Objects
 - 1.4.1. Superficial Injuries
 - 1.4.2. Deep Injuries
 - 1.4.3. Total or Partial Amputation Injuries
- 1.5. Injury Typologies Due to Blunt Injury Mechanics
 - 1.5.1. Superficial Injuries
 - 1.5.2. Deep Injuries
 - 1.5.3. Total or Partial Amputation Injuries
- 1.6. Injury Typologies of Blunt Structures and Short-Contusive Elements
 - 1.6.1. Superficial Injuries
 - 1.6.2. Deep Injuries
 - 1.6.3. Total or Partial Amputation Injuries



- 1.7. Marks on the Skeleton of Injuries Due to Blunt Mechanics
 - 1.7.1. Blunt Weapons
 - 1.7.2. Blunt Objects
 - 1.7.3. Blunt Mechanical Force Injuries
 - 1.7.4. Injuries Through Structures
 - 1.7.5. Short Blunt Injuries
- 1.8. Radiological Techniques for the Study of Blunt Force Injuries
 - 1.8.1. X-Ray
 - 1.8.2. Computerized Axial Tomography
 - 1.8.3. Other Radiographic Techniques
- 1.9. Radiobiological Techniques for the Study of Injuries of Blunt Objects and Structures
 - 1.9.1. X-Ray
 - 1.9.2. Computerized Axial Tomography
 - 1.9.3. Other Radiographic Techniques
- 1.10. Radiobiological Techniques for the Study of Blunt Mechanical Injuries and Short Blunt Elements
 - 1.10.1. X-Ray
 - 1.10.2. Computerized Axial Tomography
 - 1.10.3. Other Radiographic Techniques

Module 2. Forensic Radiology of Trauma with Sharp and Cutting Elements

- 2.1. Classification of Sharp Weapons
 - 2.1.1. Cutting Weapons
 - 2.1.2. Sharp Weapons
 - 2.1.3. Sharps
- 2.2. Injurious Mechanics of Edged Weapons
 - 2.2.1. Cutting Weapons
 - 2.2.3. Sharp Weapons
 - 2.2.4. Sharps
- 2.3. Types of Injuries Caused by Cutting Weapons
 - 2.3.1. Superficial Injuries
 - 2.3.2. Deep Injuries
 - 2.3.3. Total or Partial Amputation Injuries

- 2.4. Injury Typologies of Sharp-Edged Weapons by Sharp Weapons
 - 2.4.1. Superficial Injuries
 - 2.4.2. Deep Injuries
 - 2.4.3. Total or Partial Amputation Injuries
- 2.5. Injury Typologies of Sharp-Edged Weapons by Sharps
 - 2.5.1. Superficial Injuries
 - 2.5.2. Deep Injuries
 - 2.5.3. Total or Partial Amputation Injuries
- 2.6. Skeletal Marks from Sharp-Edged Weapon Injuries
 - 2.6.1. Cutting Weapons
 - 2.6.2. Sharp Weapons
 - 2.6.3. Sharps
- 2.7. Radiological Techniques for the Study of Cutting Weapon Injuries
 - 2.7.1. X-Ray
 - 2.7.2. Computerized Axial Tomography
 - 2.7.3. Other Radiographic Techniques
- 2.8. Radiological Techniques for the Study of Sharps Injuries
 - 2.8.1. X-Ray
 - 2.8.2. Computerized Axial Tomography
 - 2.8.3. Other Radiographic Techniques
- 2.9. Radiological Techniques for the Study of Sharps Injuries
 - 2.9.1. X-Ray
 - 2.9.2. Computerized Axial Tomography
 - 2.9.3. Other Radiographic Techniques
- 2.10. Analysis of Lesions at the Maturation Stage and in Animals
 - 2.10.1. Cutting Lesions in Individuals in Early Stages of Maturation.
 - 2.10.2. Cut Marks on Individuals in Late Stages of Biological Maturation
 - 2.10.3. Cutting Injuries in Animals

Module 3. Radiology of Firearms and Explosives Trauma in Forensic Investigation

- 3.1. Firearms and Projectiles
 - 3.1.1. Classification of Firearms
 - 3.1.2. Elements that Compose a Firearm
 - 3.1.3. Structure of the Firearm
 - 3.1.4. Firearm Projectiles
- 3.2. Characterization of Wounds and Firearm Projectile Trajectory
 - 3.2.1. Entrance Orifice
 - 3.2.2. Trajectory
 - 3.2.3. Outlet Orifice
- 3.3. X-ray Technique and Firearm Projectiles
 - 3.3.1. Number of Projectiles
 - 3.3.2. Probable Trajectory
 - 3.3.3. Probable Caliber
 - 3.3.4. Type of Firearm
- 3.4. Axial Tomography and Firearm Projectiles
 - 3.4.1. Number of Projectiles
 - 3.4.2. Trajectory
 - 3.4.3. Type of Weapons Used
- 3.5. Ultrasound and Firearm Projectile
 - 3.5.1. Number of Projectiles
 - 3.5.2. Trajectory
 - 3.5.3. Type of Weapons Used
- 3.6. Virtual Autopsy in Deaths Caused by Firearm Projectile Wounds
 - 3.6.1. Plain Radiography
 - 3.6.2. Computerized Axial Tomography
 - 3.6.3. Magnetic Resonance Imaging



- 3.7. Explosives
 - 3.7.1. Typologies of Explosive Elements
 - 3.7.2. Categorization
 - 3.7.3. Mechanics of Explosions
- 3.8. Classification of Blast Injuries
 - 3.8.1. Primary
 - 3.8.2. Secondary
 - 3.8.3. Tertiary
 - 3.8.4. Quaternary
- 3.9. Radiodiagnostic Imaging in the Search for and Retrieval of Evidence
 - 3.9.1. Simple Radiography
 - 3.9.2. Computerized Axial Tomography
 - 3.9.3. Magnetic Resonance
- 3.10. Radiological Assessment of Blast Injuries
 - 3.10.1. Cranial
 - 3.10.2. Cervical
 - 3.10.3. Chest
 - 3.10.4. Abdomen
 - 3.10.5. Extremities



You will enjoy dynamic learning thanks to the variety of multimedia resources provided by this program, including interactive summaries. 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 we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.



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

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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. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



Relearning Methodology

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

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

Professionals will learn through real cases and by resolving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.



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

With this methodology, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

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

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.



This program offers the best educational material, prepared with professionals in mind:



Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

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



Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.



Interactive Summaries

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

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



Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



06

Certificate

The Postgraduate Diploma in Forensic Radiology in Bone Trauma guarantees students, in addition to the most rigorous and up-to-date education program, access to a Postgraduate Diploma 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 program will allow you to obtain a **Postgraduate Diploma Forensic Radiology in Bone Trauma** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University, is an official European University publicly recognized by the Government of Andorra (*official bulletin*). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

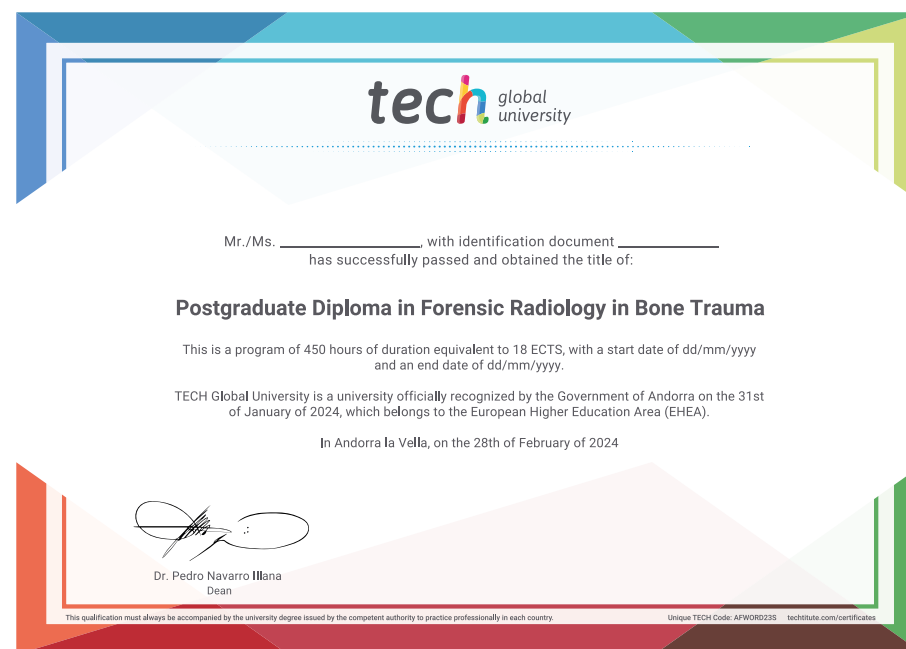
This **TECH Global University title**, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Forensic Radiology in Bone Trauma**

Modality: **online**

Duration: **6 months**

Accreditation: **18 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
development languages
virtual classroom



Postgraduate Diploma Forensic Radiology in Bone Trauma

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- » Schedule: at your own pace
- » Exams: online

Postgraduate Diploma

Forensic Radiology in Bone Trauma

