

# Postgraduate Certificate

Forensic Radiological Techniques  
of Bone and Dental Trauma



## Postgraduate Certificate Forensic Radiological Techniques of Bone and Dental Trauma

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

Website: [www.techtitute.com/us/medicine/postgraduate-certificate/forensic-radiological-techniques-bone-dental-trauma](http://www.techtitute.com/us/medicine/postgraduate-certificate/forensic-radiological-techniques-bone-dental-trauma)

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# 01

# Introduction

With the advancement of radiological technology, Medical professionals obtain detailed images of great utility in analyzing traumatic injuries to bones and teeth. Therefore, practitioners identify body damage in victims, determining its nature in order to determine the causes of death. In this way, specialists document their radiological findings in forensic reports, which serve as evidence in legal proceedings and therefore solve different criminal cases. However, in order to clarify the facts, it is vital that they have a thorough knowledge of the types of blunt force injuries. For this reason, TECH implements a university program that will delve into this issue through advanced radiological techniques. Moreover, it is based on a convenient 100% online modality.



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*With this 100% online Postgraduate Certificate, you will acquire skills to more accurately interpret radiological images and recognize the distinctive features of a variety of traumatic injuries”*

Practically every day, there are constant changes in the protocols by which physicians must be guided in forensic environments. Added to this is the emergence of new technological tools, such as Computed Axial Tomography. Consequently, experts are challenged to stay ahead of all these changes to ensure that their traumatic injury diagnoses are as accurate as possible. Otherwise, specialists would experience a considerable delay in trauma detection. In addition, a lack of understanding of advances in radiological techniques could limit opportunities to contribute to forensic investigations and even lead to errors in assessments that risk both medical and legal litigation.

In order to guarantee a practice of excellent quality, TECH is developing a Postgraduate Certificate in Forensic Radiological Techniques of Bone and Dental Trauma. The academic itinerary will delve into aspects ranging from the classification of blunt profile injury elements to the study of marks on the skeleton of injuries caused by powerful mechanics. Therefore, graduates will identify fractures in cadavers and determine their causes. Along the same lines, the academic materials will provide physicians with the most sophisticated radiobiological techniques (including X-rays and computed tomography). In addition, physicians will enhance their technical skills to process images optimally.

Regarding the methodology of this university program, TECH is based on the revolutionary Relearning teaching system. This method consists of the progressive reiteration of key concepts to ensure that graduates achieve a full understanding of the content. For access to all didactic resources, the only thing they will need is an electronic device with an Internet connection, (such as their cell phone, tablet or computer). Therefore, they will enter the Virtual Campus and enjoy dynamic learning.

This **Postgraduate Certificate in Forensic Radiological Techniques of Bone and Dental 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



*You will access an updated and rigorous academic experience that will expand your professional horizons as a physician in the field of Forensic Radiology”*

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*You will incorporate into your medical practice the most cutting-edge techniques to identify bone injuries caused by blunt objects in homicide victims”*

The program’s teaching staff includes professionals from the industry who contribute their work experience to this 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 achieve your objectives thanks to the didactic tools that TECH offers you, including interactive summaries and explanatory videos.*

*With the Relearning system, you will no longer invest a large amount of study hours and will focus on the most important concepts.*



# 02 Objectives

Through this university program, practitioners will be provided with a holistic view of the most innovative imaging techniques for the identification of bone and dental lesions. At the same time, graduates will enhance their interpretation skills to detect fractures, dislocations or contusions, among others.

In this way, medical professionals will be able to determine the nature of traumatic injuries and the chronology of the events. In addition, they will develop communication skills to accurately document their radiological findings to serve as evidence in legal proceedings.







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*You will develop competencies to interpret radiological images accurately and recognize the distinguishing features of different types of bone or dental injuries”*



## General Objectives

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- ♦ 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





## Specific Objectives

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- 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



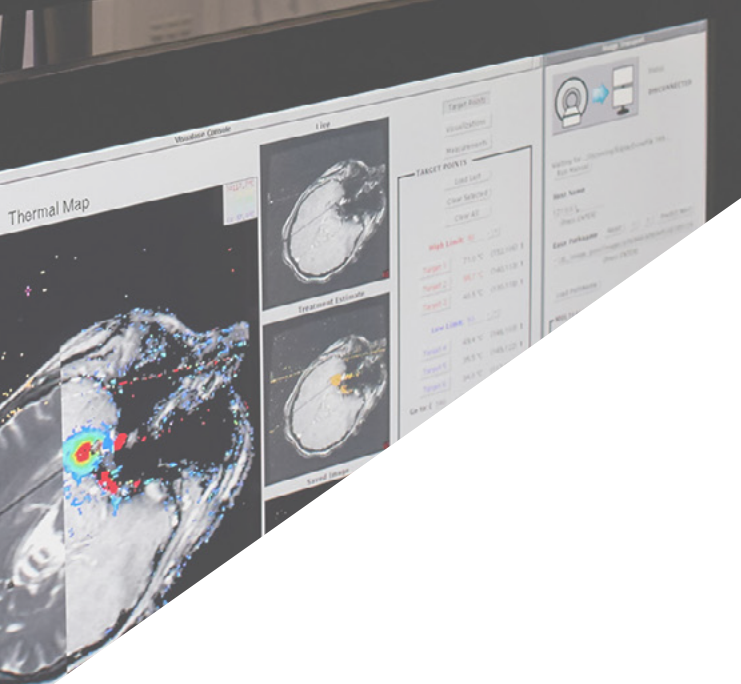
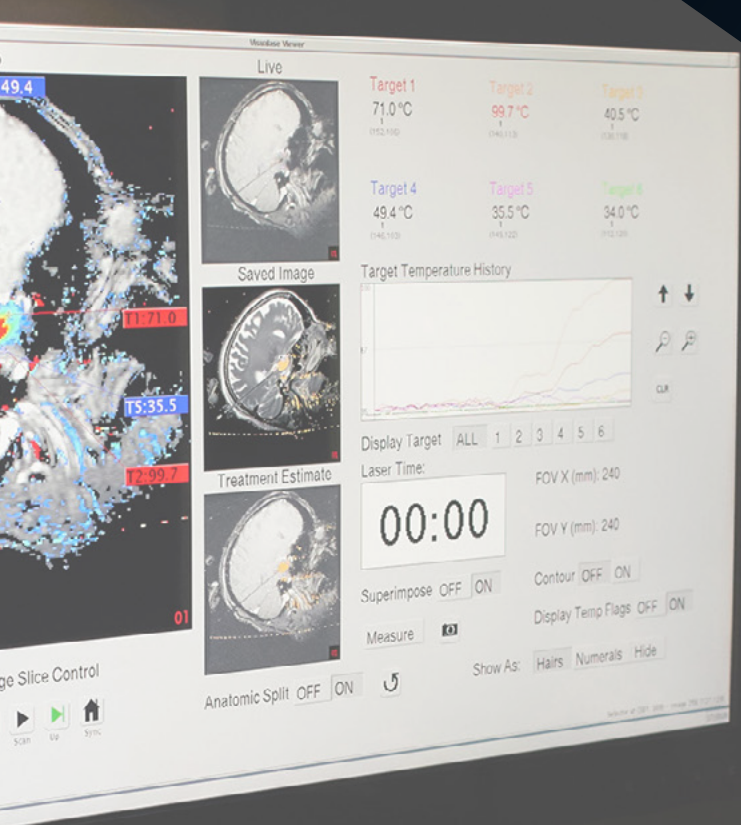
*The clinical case studies in this program will give you a more accurate approach to the identification of skeletal marks from blunt mechanical injuries”*

# 03

# Course Management

In order to offer a high quality educational experience, TECH has carried out an exhaustive selection process to choose the teaching staff that makes up this Postgraduate Certificate. Therefore, it has brought together references in the field of Forensic Radiology. These experts stand out both for their solid knowledge in this field and for their extensive professional background, where they have been part of recognized institutions. Thanks to this, graduates will have access to first-class academic content to strengthen their skills and experience a leap in quality in their professional careers.





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*An experienced teaching team will accompany you throughout this academic itinerary to clarify complex concepts and other aspects of the syllabus”*

## 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 by 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

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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 university program will deal with the classification and interpretation of both physical and radiological radiographic techniques. In this way, the syllabus will provide the keys to handle state-of-the-art technological tools, among which the following stand out: Computed Axial Tomography or X-Ray. Graduates will develop advanced skills to adequately interpret radiological images, thus identifying traumatic injuries and their nature. In addition, the syllabus will address the injury mechanics of blunt elements such as hammers or mallets, as well as the most common injuries. In this way, physicians will provide radiological findings to contribute to the assessment of damage in victims of abuse.





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*A complete syllabus that includes all the competencies you need to take a step towards the highest medical quality”*

## 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



*If you have set yourself the goal of updating your knowledge on Forensic Radiological Techniques, TECH gives you the opportunity to achieve it while combining it with your other responsibilities, 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 Certificate in Forensic Radiological Techniques of Bone and Dental Trauma guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.





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

This private qualification will allow you to obtain a **Postgraduate Certificate in Forensic Radiological Techniques of Bone and Dental 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** 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 Forensic Radiological Techniques of Bone and Dental Trauma**

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.



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