

Postgraduate Certificate

Forensic Radiology of
the Human Skeleton at
Different Stages of Biological
Development



Postgraduate Certificate Forensic Radiology of the Human Skeleton at Different Stages of Biological Development

- » 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/forensic-radiology-human-skeleton-different-stages-biological-development

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01

Introduction

In a recent report, the World Health Organization shares its concern about the increase in the rate of violent deaths. This is particularly noticeable in Russia, which has become the country with the highest rate on the continent, registering 6.8 deaths per year. Many of them involve children, so the organization urges nurses to expand their knowledge in the field of Forensic Radiology and therefore provide a more complete care to the corpses. In this way, they will contribute to obtaining detailed radiological images to detect traumatic injuries. For this reason, TECH implements a program aimed at professionals that will focus on this subject. In addition, it is taught in a convenient 100% online format.



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Thanks to this 100% online Postgraduate Certificate, you will optimize your assistance in radiological procedures and ensure that the bodies are positioned correctly for imaging"

In the context of Forensic Radiology, it is vital that professionals have a comprehensive understanding of the structure of the infant skull for several reasons. Among them, radiological images serve to identify signs of unusual injuries or fractures that may be indicative of child abuse. Given this, nursing staff play a key role in radiological imaging, as they are responsible for establishing body postures to identify signs of violence. Along the same lines, nurses assist radiological technicians during these procedures, positioning individuals as needed to obtain the appropriate snapshots. They also coordinate the transport of bodies from the morgue or other locations to the radiology room, ensuring that the integrity of the mortal remains is maintained.

Therefore, TECH is developing a revolutionary Postgraduate Certificate in Forensic Radiology of the Human Skeleton at Different Stages of Biological Development. The syllabus will examine in detail the bone pathophysiology of children, taking into account factors such as bone tissue composition and cellular components. At the same time, the didactic materials will highlight the importance of Bone Vascularization in determining the age of the victims at the time of death. The syllabus will also delve into the most common acquired pathologies in developing individuals, such as respiratory or ear infections. In addition, graduates will acquire new skills to document radiological findings and make the most reliable reports.

On the other hand, the academic itinerary is supported by the disruptive Relearning methodology, based on the gradual reiteration of concepts throughout each module. In addition, the contents will be taught by a prestigious teaching staff that fully masters all the complexities of Forensic Radiology Nursing.

This **Postgraduate Certificate in Forensic Radiology of the Human Skeleton at Different Stages of Biological Development** 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
- ♦ The availability of access to the contents from any fixed or portable device with an Internet connection.



Gain a deeper understanding of Forensic Radiology of the Human Skeleton, enabling you to provide the most comprehensive care"

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You will acquire optimal communication skills to document radiological findings with accuracy and clarity”

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 learn more about Bone Vascularization, a fundamental study technique for determining the age of individuals.

Through this qualification, you will update your knowledge at your own pace and without strict timetables thanks to TECH's Relearning system.





By studying this program, you will optimize your daily practice to provide the necessary care to patients and contribute to the success of radiological procedures"



General Objectives

- ♦ Analyze the sequence of ossification, joint development and the formation of bone structures at different stages of childhood, as well as the factors that influence bone growth, such as genetics, nutrition and chronic diseases
- ♦ Develop skills to interpret specific images of the above conditions and understand their impact on growth and musculoskeletal function
- ♦ Understand how skeletal growth and mineralization are processes that begin during fetal development and continue at different rates through childhood and adolescence until the third decade of life, when peak bone mass is reached
- ♦ Identify normal features of childhood bone anatomy, as well as signs of traumatic injuries, bone disease and pediatric orthopedic conditions, with emphasis on the importance of exposure to specific imaging techniques for children and the radiologic safety considerations for this group





Specific Objectives

- ◆ Determine the development of the bone along the growth phases, from the neonatal phase to adolescence and the respective images obtained by radiographs
- ◆ Master the morphology of healthy bone: its histology, the ossification center, the different types of bone tissues present in the bones and their dynamics during childhood
- ◆ Analyze bone factors with congenital, metabolic and infectious pathologies, distinguishing them from healthy bone and know how to apply the appropriate imaging technique to each case
- ◆ Identify the most frequent bone lesions among children and adolescents, including the establishment of the difference between accidental injuries and injuries possibly resulting from assault and abuse

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You will have the most dynamic multimedia resources that will allow you to apply what you have studied to daily practice in a simple way”

03

Course Management

For the design and delivery of this Postgraduate Certificate, TECH has recruited the best specialists in the field of Forensic Radiology of the Human Skeleton at Different Stages of Biological Development. These specialists have a wide working background, which has allowed them to work professionally in internationally renowned institutions. They also keep abreast of the latest advances in their speciality in order to provide high quality services. Therefore, graduates have the guarantees they demand to update their knowledge and, therefore, experience a notable leap in quality in their professional careers.



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Throughout the program, you will have the specialized advice of a teaching team made up of experts with extensive experience in Forensic Radiology”

Management



Dr. Ortega Ruiz, Ricardo

- PhD in Biomedical Engineering from the Polytechnic University of Madrid, specializing in Diagnostic Imaging.
- 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

Ms. Leyes Merino, Valeria Alejandra

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

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

Under a theoretical-practical approach, this university program will provide professionals with a solid understanding of the human skeleton in its developmental stages. The syllabus will focus on the detailed study of bone physiopathology, focusing on the composition of bone tissue and cellular components. At the same time, the syllabus will also delve into the most innovative radiological techniques for the analysis of pathologies in developing individuals. In this way, nurses will obtain high quality images to detect bone diseases such as Osteogenesis Imperfecta. The didactic materials will also delve into the frequent traumas resulting from aggression.





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An exhaustive syllabus that includes the latest scientific postulates on Bone Changes resulting from hormonal action”

Module 1. Forensic Radiology of the Human Skeleton in Phases of Biological Development

- 1.1. Bone Physiopathology in the Forensic Context
 - 1.1.1. Functions
 - 1.1.2. Composition - Bone Tissue
 - 1.1.3. Cellular Component
 - 1.1.3.1. Bone-Forming Cells (Osteoblasts)
 - 1.1.3.2. Bone Destroyers (Osteoclasts)
 - 1.1.3.3. Mature Bone Cells (Osteocytes)
- 1.2. Osteogenesis in Individuals in the Forensic Context
 - 1.2.1. Membranous Ossification Pathway
 - 1.2.2. Chondral Ossification Pathway
 - 1.2.3. Periosteum
- 1.3. Bone Vascolarization in the Forensic Context
 - 1.3.1. Main Pathway
 - 1.3.2. Epiphyseal Pathway
 - 1.3.3. Metaphyseal Pathway
 - 1.3.4. Periosteal Arterial Pathway
- 1.4. Bone Growth in the Forensic Context
 - 1.4.1. Width
 - 1.4.2. Length
 - 1.4.3. Associated Pathologies
- 1.5. Forensic Radiology of Pathologies in Developing Individuals
 - 1.5.1. Congenital Pathologies
 - 1.5.2. Acquired Pathologies
 - 1.5.3. Trauma and its Variants
- 1.6. Bone Diseases Through Diagnostic Imaging in the Forensic Context
 - 1.6.1. Osteoporosis
 - 1.6.2. Bone Cancer
 - 1.6.3. Osteomyelitis
 - 1.6.4. Osteogenesis Imperfecta
 - 1.6.5. Rickets





- 1.7. Forensic Radiology of the Child Skull
 - 1.7.1. Embryonic, Fetal and Neonatal Formation.
 - 1.7.2. Fontanelles and Fusion Phases
 - 1.7.3. Facial and Dental Development
- 1.8. Forensic Radiobiological Osteology in the Adolescent
 - 1.8.1. Sexual Dimorphism and Bone Growth
 - 1.8.2. Bone Changes Resulting from Hormonal Action
 - 1.8.3. Juvenile Growth Retardation and Metabolic Problems
- 1.9. Trauma and Categories of Childhood Fractures in Forensic Diagnostic Imaging
 - 1.9.1. Frequent Traumas in Infantile Long Bones
 - 1.9.2. Frequent Traumas in Infantile Flat Bones
 - 1.9.3. Trauma Resulting from Aggression and Mistreatment
- 1.10. Radiology and Diagnostic Imaging Techniques in Forensic Pediatrics
 - 1.10.1. Radiology for Neonates and Infants
 - 1.10.2. Radiology for Children in Early Childhood
 - 1.10.3. Radiology for Adolescents and Juveniles



TECH will help you to stand out in the field of Forensic Radiology of the Human Skeleton in Biological Maturation Phases. Don't wait any longer and sign up"

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.





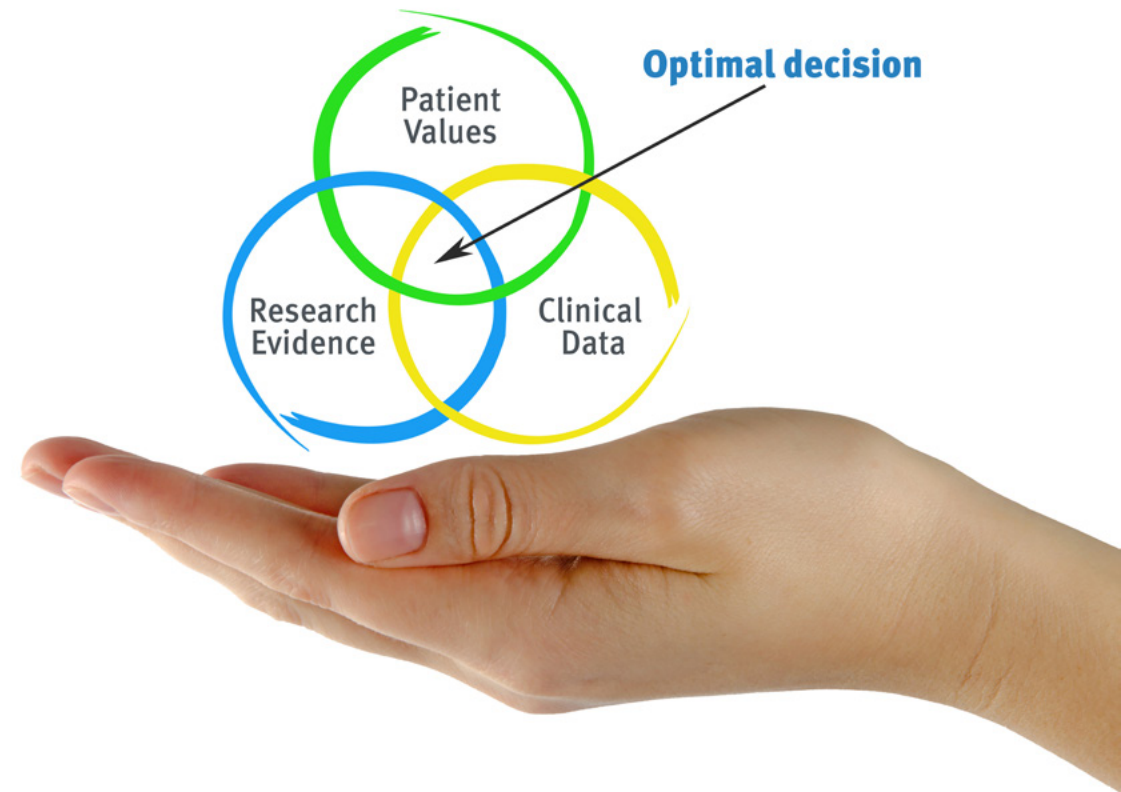
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Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

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 Forensic Radiology of the Human Skeleton at Different Stages of Biological Development 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 Forensic Radiology of the Human Skeleton at Different Stages of Biological Development** 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.

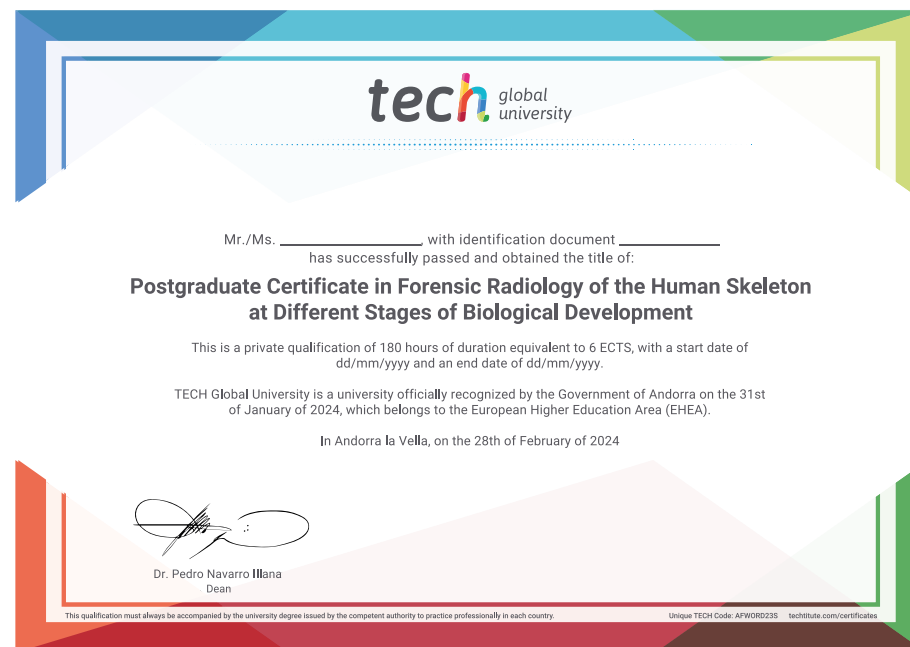
This **TECH Global University** private qualification, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Forensic Radiology of the Human Skeleton at Different Stages of Biological Development**

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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