

# Postgraduate Certificate

## Diagnostic Imaging of the Musculoskeletal System



## Postgraduate Certificate Diagnostic Imaging of the Musculoskeletal System

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 4 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/medicine/postgraduate-certificate/diagnostic-imaging-musculoskeletal-system](http://www.techtute.com/us/medicine/postgraduate-certificate/diagnostic-imaging-musculoskeletal-system)

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# 01

# Introduction

Diagnostic imaging is becoming increasingly important in medicine. Radiodiagnostic techniques for pathologies of the musculoskeletal system have evolved rapidly in recent years due to the development of new technologies and bioengineering. Knowledge of these developments, techniques and their implementation in the medical process, make it essential for the specialised doctor to be constantly updated.



A blue-tinted X-ray image of a human hand, showing the bones of the fingers and the wrist. The image is positioned in the upper left quadrant of the page, partially overlapping a dark blue background. The rest of the page is divided into a white triangular area and a dark blue triangular area.

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*New scenarios in today's radiology drive us to propose new specialization programs that meet the real needs of experienced professionals, so that they can incorporate new advances in the field of imaging techniques of the musculoskeletal system into their daily practice"*

The radiological study of the pathology of the musculoskeletal system is a subspecialty of special importance nowadays. These pathologies have a high prevalence in our society, whether of occupational, sports or involuntional origin. Most of them condition the patient's sick leave, due to the necessary rest or inability to perform daily tasks. The rapid and accurate diagnosis of these pathologies leads to considerable savings for the healthcare system, as it reduces the time off work and results in an earlier return to work. Likewise, the aging of the population means an increase in degenerative and incapacitating pathologies, with a high demand for diagnostic imaging techniques.

The program is aimed at updating the professional in the study of the most important aspects of the musculoskeletal system, addressing the latest advances in pathology of the spine, shoulder, wrist, hip, knee, ankle and sports muscle injuries.

In addition, it is completed with a module on topical issues, such as imaging biomarkers, dual-energy CT and multiparametric studies in radiology.

This **Postgraduate Certificate in Diagnostic Imaging of the Musculoskeletal System** contains the most complete and up-to-date scientific program on the market. The most important features of the University Course are:

- Clinical cases presented by specialists in radiodiagnostics and other specialties. The graphic, schematic, and eminently practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional practice.
- Real high-resolution images, both of pathologies of the musculoskeletal System, and imaging diagnostic tests.
- Presentation of practical workshops on procedures and techniques.
- Algorithm-based interactive learning system for decision-making in the presented clinical situations.
- Action protocols for radioprotection and the most important developments in imaging diagnostic techniques.
- All this will be complemented by 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 be able to learn, through the latest educational technology, the latest advances in diagnostic imaging of pathologies of the musculoskeletal system”*



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*This Postgraduate Certificate may be the best investment you can make when choosing a refresher program for two reasons: in addition to updating your knowledge in Diagnostic Imaging of the Musculoskeletal System, you will obtain a certificate from TECH Global University"*

Its teaching staff includes a team of leading radiologists, who bring to this training the experience of their work, in addition to recognized specialists in other medical fields.

The multimedia content developed with the latest educational technology will provide the physician with situated and contextual learning, i.e., a simulated environment that will provide immersive training programmed to train in real situations.

This program is designed around Problem Based Learning, whereby the student must try to solve the different professional practice situations that arise during the course. For this reason, you will be assisted by an innovative, interactive video system created by renowned and experienced experts in the field of radiology with extensive teaching experience.

*Incorporate the latest developments in diagnostic imaging of the musculoskeletal system into your medical practice and improve your patients' prognosis.*

*It includes clinical cases and real images in high definition to bring clinical practice as close as possible to the development of the program.*



# 02

# Objectives

The main objective is aimed at allowing the incorporation of the developments that are taking place in the diagnostic approach to the pathologies musculoskeletal system, ensuring that the specialist can update their knowledge in a practical way, with the latest educational technology and adapting the educational process to their real needs.





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*This refresher program will provide skills to act with confidence in decision making during the diagnostic process, and help you grow professionally”*



## General Objective

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- Update the medical specialist in the latest procedures and techniques performed in the process of diagnosis of pathologies in the musculoskeletal system, incorporating these latest developments in the discipline to increase the quality of their daily medical practice and improve the patient's prognosis.



## Specific Objectives

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- Analyze the radiological findings of disc and joint pathology of the spine.
- Identify the changes produced by vertebral traumatic and neoplastic pathologies.
- Evaluate the radiological semiology (Rx, ultrasound and MRI) of rotator cuff pathology.
- Recognize injuries secondary to gleno-humeral dislocation with radiological techniques.
- Systematize the technique of joint puncture for arthrography.
- Analyze trauma and degenerative pathology of the wrist with radiological techniques.
- Diagnose pelvic injuries with MRI.
- Recognise the different types of meniscus tears with MRI.
- Identify the normal anatomy and the semiology of knee ligament injuries.



- Evaluate cartilaginous lesions of the knee and arthropathies.
- Analyze post-traumatic lesions of the ankle with imaging techniques.
- Use ultrasound and MRI to recognize sporting muscle injuries.
- Revise the technological advances in image biomarkers.
- Analyze the technique and indications of dual-energy CT.
- Evaluate the methodology of multiparametric studies in radiology.





# 03

## Structure and Content

The structure of the syllabus has been designed by a team of professionals with knowledge of the implications of medical training in the approach to the diagnostic process, who are aware of the relevance of the up-to-date training, and are committed to quality teaching using new educational technologies.





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*This Postgraduate Certificate in Diagnostic Imaging of the Musculoskeletal System contains the most complete and up-to-date scientific program on the market”*



### Module 1: Musculoskeletal System

- 1.1. Rotator Cuff Pathology.
- 1.2. Glenohumeral Instability.
- 1.3 Degenerative Wrist Pathology.
- 1.4. Degenerative Wrist Trauma.
- 1.5. Degenerative Spine Pathology.
- 1.6. Meniscal Pathology.
- 1.7. Knee Ligament Pathology.
- 1.8. Cartilage and Knee Arthropathy.
- 1.9. Ankle Trauma Lesions.
- 1.10. Musculotendinous Injuries.

### Module 2: Trending topic

- 2.1. Biomarkers in Imaging.
- 2.2. Dual-Energy CT.
- 2.3. Multiparametric Studies in Radiology.





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*A unique, key, and decisive training experience to boost your professional development”*



04

# Methodology

This training program provides you with a different way of learning. Our methodology uses a cyclical learning approach: ***Re-learning***.

This teaching system is used 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 Re-learning, 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

In a given situation, what would you do? Throughout the program, you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, resolve the situation. There is abundant scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

*With TECH you can 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 potential 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 professional medical 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 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 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.



## Re-learning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Re-learning.

Our 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, which represent a real revolution with respect to simply studying and analyzing cases.



*The physician 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 Re-learning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best Spanish-speaking online university (Columbia University).

With this methodology we have trained more than 250,000 physicians with unprecedented success, in all clinical specialties regardless of the surgical load. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*Re-learning 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 (we learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

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





In this program you will have access to the best educational material, prepared with you 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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



#### Latest 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 this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.



#### Interactive Summaries

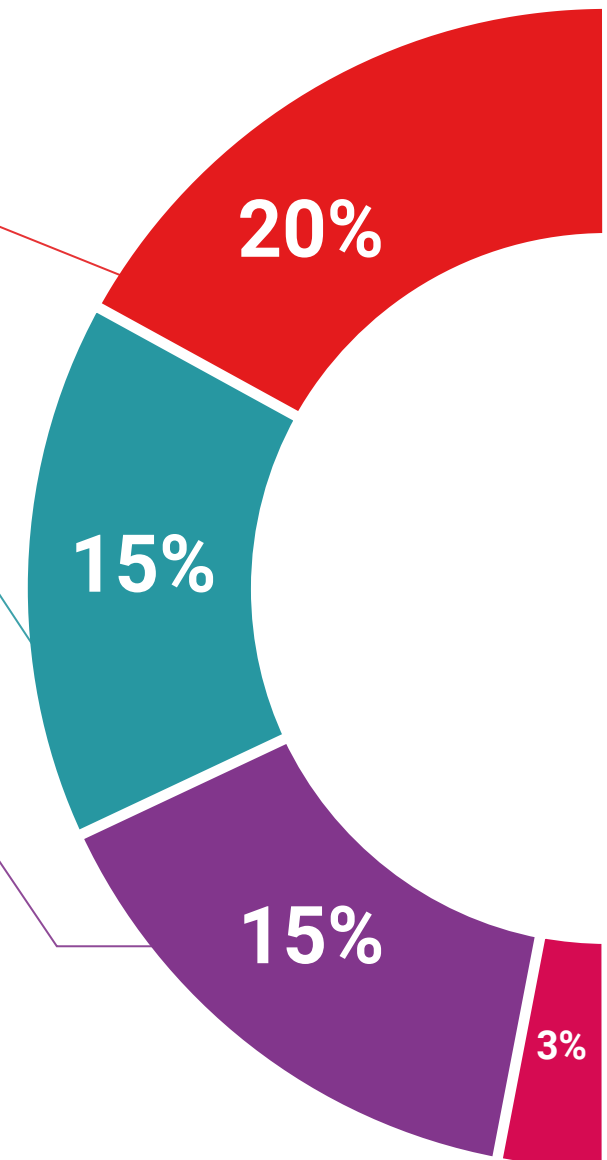
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



#### Additional Reading

Recent articles, consensus documents, international guides. in our virtual library you will have access to everything you need to complete your training.





**Expert-Led Case Studies and Case Analysis**

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the expert will guide you through 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 your knowledge throughout the program, through assessment and self-assessment activities and exercises: so that you can see how you are achieving your 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 our future difficult decisions.



**Quick Action Guides**

We offer you the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help you progress in your learning.





# 05 Certificate

The Postgraduate Certificate in Diagnostic Imaging of the Musculoskeletal System guarantees you, in addition to the most rigorous and updated specialization, access to a certificate issued by TECH Global University.



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*Successfully complete this training and receive your diploma without the hassle of travel or paperwork”*

This program will allow you to obtain your **Postgraduate Certificate in Diagnostic Imaging of the Musculoskeletal System** 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 Certificate in Diagnostic Imaging of the Musculoskeletal System**

Modality: **online**

Duration: **6 weeks**

Accreditation: **4 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.

health future  
confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present  
online tr  
velopment languages  
virtual classroom



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