

# Postgraduate Certificate

## Magnetic Resonance Imaging for Nursing





## Postgraduate Certificate Magnetic Resonance Imaging for Nursing

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

Website: [www.techtute.com/us/nursing/postgraduate-certificate/magnetic-resonance-imaging-nursing](http://www.techtute.com/us/nursing/postgraduate-certificate/magnetic-resonance-imaging-nursing)

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# 01

# Introduction

The achievements made in the improvement of the image quality of MRIs, as well as in the patient's comfort when undergoing this test, allow offering a comprehensive and personalized diagnosis. These advances sometimes involve updating procedures and protocols, where the nursing professional must be aware to ensure patient care and assistance. For this reason, this degree was created to offer healthcare professionals the most rigorous information, based on the latest scientific evidence in the use of MRI for the detection of certain diseases. An academic proposal in a 100% online pedagogical format, which facilitates self-management of study and easy access to its content from any digital device with an Internet connection.





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*A 100% online Postgraduate Certificate  
with the best didactic material on Magnetic  
Resonance oriented to Nursing professionals”*

In the field of Nursing, Magnetic Resonance Imaging has become an essential tool for the evaluation of various pathologies, from musculoskeletal injuries to neurological diseases. Not surprisingly, the accuracy and speed with which images are obtained, together with its ability to detect lesions and pathologies that may go unnoticed in other tests, make this technique an indispensable tool to assist more effectively with a multitude of conditions.

For this reason, there is an increasing demand for nursing professionals positioned as experts in this imaging test, so with TECH any nurse will be able to get fully up to date thanks to this qualification. In this sense, the program will not only analyze the components of the MRI equipment, the objectives of the exploration and the risks associated with it, but it will also cover the history of this diagnostic test and its evolution over time. Undoubtedly, a tremendously comprehensive high-level preparation designed to add enormous value to the curriculum of the nursing graduates.

Always in a convenient online format, the nurses will improve their patient care based on the most recent scientific evidence. To do so, they will have all the flexibility they can imagine, since they will be in charge of managing their own time and academic resources. Throughout the 180 hours of this Postgraduate Certificate, you will consult explanatory videos, interactive summaries or complementary readings according to your own personal or professional needs.

This **Postgraduate Certificate in Magnetic Resonance Imaging for Nursing** contains the most complete and up-to-date scientific program on the market. Its most outstanding features are:

- ♦ The development of case studies presented by experts in Nursing in the area of Diagnostic and Imaging Treatment
- ♦ Graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential 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



*In 6 weeks, you will deepen your knowledge of the care provided by the nurse in the performance of Magnetic Resonance Imaging tests"*

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*Are you looking for a university program that is compatible with your daily responsibilities? This is the right program for you, TECH adapts to you"*

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

Its multimedia content, developed with the latest educational technology, will provide the professionals with situated and contextual learning, i.e., a simulated environment that will provide an immersive education programmed to learn in real situations.

This program's design focuses on Problem-Based Learning, through which the professionals must try to solve the different professional practice situations that arise during the academic program. For this purpose, the students will be assisted by an innovative interactive video system created by renowned experts.

*With the Relearning system you will not have to invest a great amount of study hours and you will focus on the most relevant concepts.*

*Thanks to TECH you will be up to date from diagnostic studies of the Central Nervous System, Pulmonary Angiography to musculoskeletal lesions in MRI.*



# 02 Objectives

Throughout this Postgraduate Certificate, the graduates will have the opportunity to effectively update themselves on the different examinations carried out with Magnetic Resonance Imaging, the care to be provided to the patient and the improvements in the equipment. Procedures that you will be able to integrate thanks to the clinical case studies that you will have access to, comfortably, anywhere in the world and from a cell phone, computer or *Tablet* with an Internet connection.







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*The clinical videos and case studies bring you much closer to the methodologies used in the risks of MRI scanning"*



## General Objectives

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- ◆ Promote work strategies based on the practical knowledge of a tertiary level hospital and its application in Diagnostic Imaging, Nuclear Medicine and Radiation Oncology services
- ◆ Favor the enhancement of technical skills and abilities through care procedures and case studies
- ◆ Provide nurses with a process of updating their knowledge in the field of Radiology
- ◆ Be up to date with the care management and organization of the Diagnostic Imaging and Treatment Area, in order to optimize the operation of the Radiology Service
- ◆ Develop skills and competencies in nurses for their performance in the nursing consultation in the Diagnostic Imaging and Treatment Department (DTI)
- ◆ Expand nurses' knowledge of radiation oncology, interventional vascular radiology and neuroradiology to improve patient care in these specific areas





## Specific Objectives

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- ◆ Delve into the history, physical fundamentals, elements and components involved in MR imaging
- ◆ Understand the objectives of the diagnostic exploration: Central Nervous System studies, abdominal and gynecological diagnostic studies, breast and pulmonary angiography studies, musculoskeletal lesion studies and cardiac diagnostic studies
- ◆ Learn the risks of the explorations: metal objects, reactions to contrast material and those derived from sedation
- ◆ Develop the necessary competences to elaborate the nursing care process for patients attended in Magnetic Resonance Imaging

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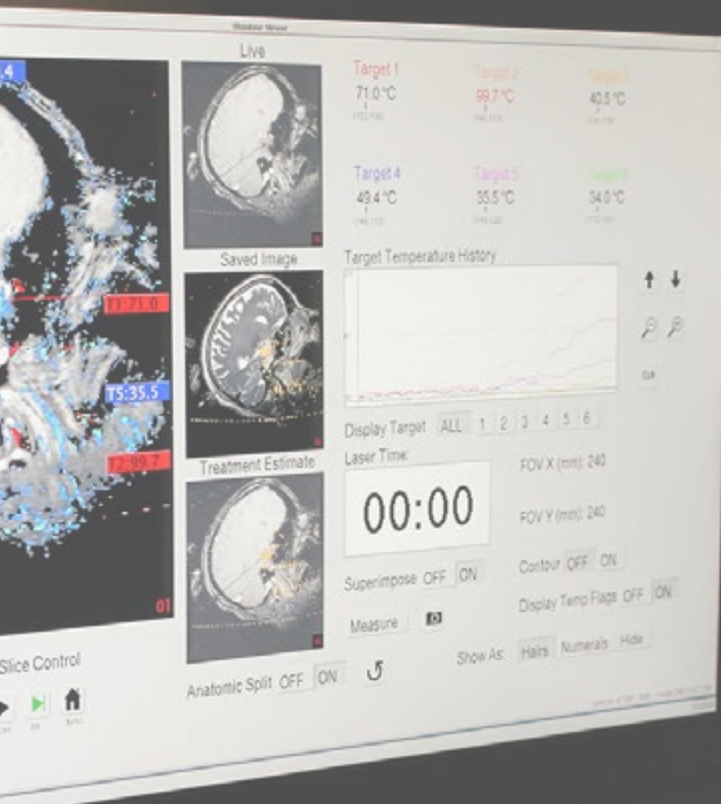
*Updating your knowledge of the physical fundamentals of Magnetic Resonance Imaging will be much easier thanks to the multimedia material provided by this program”*

# 03

# Course Management

In order to offer the nursing professionals an update in the techniques and procedures used in Magnetic Resonance Imaging, TECH has brought together an excellent team of health professionals with extensive experience in the area of Diagnostic Imaging and Treatment in reference hospitals. Their vast experience in health care and team coordination allows students to obtain an update from the best experts in this field.





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*An excellent teaching team specialized in Radiological Nursing provides you with a quality Postgraduate Certificate with a first class theoretical and practical approach"*

## Management



### **Ms. Viciano Fernández, Carolina**

- ♦ Nurse in the Radiodiagnosis and Nuclear Medicine
- ♦ Postgraduate Certificate in Nursing
- ♦ Professional Master's Degree in Pediatric Nursing
- ♦ University Specialist in Emergency and Catastrophe Nursing
- ♦ University Specialist in Nursing in the Surgical Area
- ♦ Nuclear Medicine Radioactive Installations Operator License by the Nuclear Safety Council



### **Ms. García Argüelles, MARÍA Noelia**

- ♦ Area Supervisor of Diagnostic Imaging and Treatment at the Asturias University Central Hospital
- ♦ Professor in the Department of Medicine at the University of Oviedo
- ♦ Professor at numerous conferences and congresses, including the Congress of the Society of Radiological Nursing
- ♦ Postgraduate Certificate in Nursing
- ♦ Professional Master's Degree in Prevention Management in the Company
- ♦ Professional Master's Degree in Urgency, Emergencies and Catastrophes
- ♦ Member of the panel of auditors authorized by the Quality Assessment Unit of the Health Service of the Principality of Asturias
- ♦ Certificate of Pedagogical Aptitude for Secondary Education Teachers
- ♦ Radioactive Facilities Operator License in Nuclear Medicine by the Nuclear Safety Council



# 04

## Structure and Content

This Postgraduate Certificate is distinguished among other elements by containing an advanced syllabus on Magnetic Resonance Imaging, its evolution, the risks of exploration, as well as the various scans that are performed depending on the patient and pathology. All this, accompanied by video summaries, videos in detail or scientific literature with which to further extend the information provided in this program of 180 teaching hours of the highest quality.







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*You are in front of the most effective study plan on Magnetic Resonance oriented to Nursing professionals"*

## Module 1. Magnetic Resonance

- 1.1. What is an MRI?
  - 1.1.1. Introduction
  - 1.1.2. History of Magnetic Resonance Imaging and its Evolution
  - 1.1.3. Definition and Application
  - 1.1.4. Physical Fundamentals, Elements and Components involved in Magnetic Resonance Imaging
- 1.2. Components of a Magnetic Resonance Equipment
  - 1.2.1. Contrasts, Acquisition Time and Resolution
  - 1.2.2. Artifacts
  - 1.2.3. Room Characteristics
- 1.3. Scanning Objectives
  - 1.3.1. Introduction
  - 1.3.2. Central Nervous System Diagnostic Studies
  - 1.3.3. Abdominal and Gynecological Diagnostic Studies
  - 1.3.4. Diagnostic Studies of Breast and Pulmonary Angiography
  - 1.3.5. Diagnostic Studies of Musculoskeletal Lesions
  - 1.3.6. Cardiac Diagnostic Studies
- 1.4. Risks of the Exploration
  - 1.4.1. Implanted Metal Objects
  - 1.4.2. Reactions to Contrast Material
  - 1.4.3. Sedation-Related Risks
- 1.5. Neurological Examination
  - 1.5.1. Description and Protocols
  - 1.5.2. Preparation
  - 1.5.3. Nursing Care Process
- 1.6. Pediatric Examinations
  - 1.6.1. Description and Protocols
  - 1.6.2. Preparation
  - 1.6.3. Nursing Care Process



- 1.7. Musculoskeletal Examination
  - 1.7.1. Description and Protocols
  - 1.7.2. Preparation
  - 1.7.3. Nursing Care Process
- 1.8. Abdominal and Gynecological Examinations
  - 1.8.1. Description and Protocols
  - 1.8.2. Preparation
  - 1.8.3. Nursing Care Process
- 1.9. Thoracic Explorations: Breast and Pulmonary Angiography
  - 1.9.1. Description and Protocols
  - 1.9.2. Preparation
  - 1.9.3. Nursing Care Process
- 1.10. Cardiac Examinations
  - 1.10.1. Description and Protocols
  - 1.10.2. Preparation
  - 1.10.3. Nursing Care Process

“*Integrate into your daily practice the most current nursing care processes in the performance of cardiac MRI examinations*”



# 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. 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, 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

This Postgraduate Certificate in Magnetic Resonance Imaging for Nursing guarantees students, in addition to the most rigorous 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 program will allow you to obtain your **Postgraduate Certificate in Magnetic Resonance Imaging for Nursing** 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.

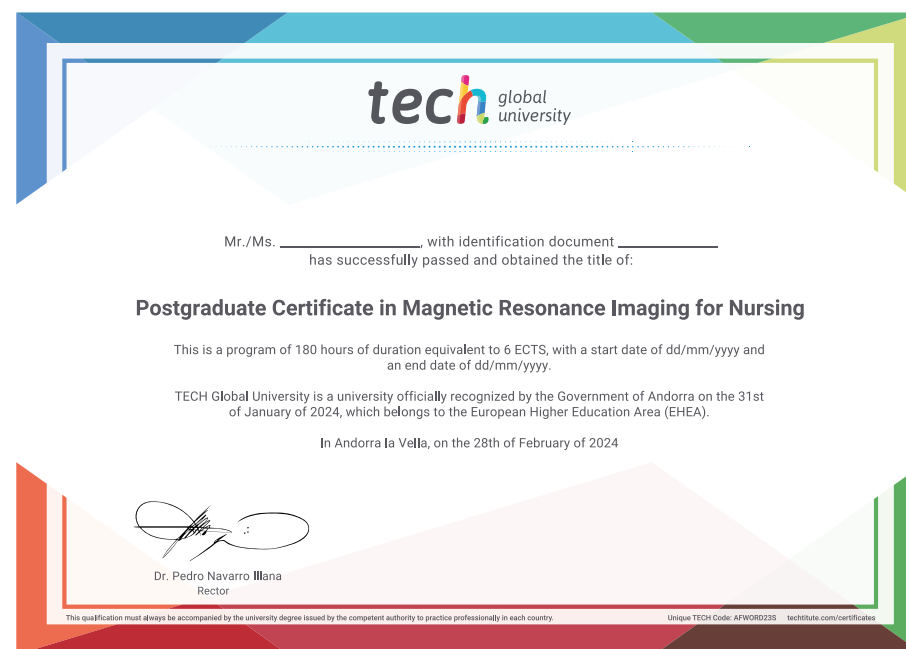
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Magnetic Resonance Imaging for Nursing**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



future

health confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commitment

personalized service innovation

knowledge present

online training

development languages

classroom

**tech** global  
university

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