Postgraduate Diploma

Nursing in the Diagnostic Imaging (DI) and Treatment Department

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Postgraduate Diploma

Nursing in the Diagnostic Imaging (DI) and Treatment Department

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

Website: www.techtitute.com/us/nursing/postgraduate-diploma/postgraduate-diploma-nursing-diagnostic-imaging-di-treatment-department

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01

Introduction

Rapid technological advancement has allowed progress in diagnostic techniques such as CT and MRI, both of which are of high value in modern medical care. For this reason, Nursing professionals must be aware of the protocols for action in environments related to electromagnetic radiation and patient care plans. Therefore, this 100% online program is born, which leads the graduates to perform a complete update over 6 months on the relevant role of the healthcare professional in the Diagnostic Imaging and Treatment Department, as well as the different types of examinations that are performed in it with the most cutting-edge equipment. All with a theoretical-practical approach provided by innovative didactic material.

You are before a Postgraduate Diploma that brings together in 540 hours the most current program on the Diagnostic Imaging and Treatment Department"

The specialization of nursing professionals is increasingly valued and pressing, especially in view of the continuous technical progress in areas such as the Diagnostic Imaging and Treatment Department. Therefore, in the field of radiology care, the role of these health professionals is key in the application of care, the execution of diagnostic and therapeutic procedures, the prevention and treatment of side effects or complications.

A reality that leads to be in a continuous updating of knowledge on the latest techniques and protocols. In this line this Postgraduate Diploma designed by TECH to provide the graduates with the latest information thanks to the content developed by an excellent teaching team with an extensive career in the DTI Service.

It is a program of 540 teaching hours, which will lead students to make an intensive academic journey at the same time dynamic. The graduates will have video summaries of each topic, detailed videos and clinical case studies, which can be accessed at any time of the day, from a digital device with an Internet connection.

A process of updating according to the times and current needs of professionals. The student will be able to delve into the role of nursing in a DTI, contrast screening, administration reactions, hypersensitivity, test management or exploration objectives with a CT scan and an MRI.

In addition, the Relearning method, based on the continuous repetition of key concepts during the course, will allow you to reduce the long hours of study and memorization. A system that will allow you to consolidate the most important concepts covered in this program in a simple way. An excellent university proposal that gives students greater freedom to self-manage their study time and obtain the balance they need to reconcile a quality university program with their daily work and personal activities.

This **Postgraduate Diploma in Nursing in the Diagnostic Imaging (DI) and Treatment Department** contains the most complete and up-to-date scientific program on the market. The most important features include:

- The development of case studies presented by experts in Nursing in the area of Diagnostic and Imaging Treatment
- 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 self-assessment can be used 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

Get an effective update on the protocols for the performance of Computed Tomography"

If you have a computer with an Internet connection you will be able to connect from anywhere in the world to the most complete program on DTI Nursing"

Thanks to the Relearning method you will get a complete update in DI and Treatment in only 6 months.

An educational option that will allow you to dynamically delve into the physical fundamentals, elements and components of Magnetic Resonance.

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, students will be assisted by an innovative interactive video system created by renowned and experienced experts.

02

Objectives

This Postgraduate Diploma has been conceived with the purpose of providing the graduates with the most recent information on the Diagnostic Imaging and Treatment Department. This way, at the end of this program, they will have obtained an increase in their competences for the approach of patients in this area, perfecting each of the procedures in the performance of Computed Tomography and Magnetic Resonance Imaging. All this, in addition to a syllabus that provides a theoretical-practical perspective and the most rigorous academic literature.

You will achieve the update you are looking for in DI and Treatment through the best teaching material and with a syllabus that provides you with an approach of great practical application"

General Objectives

- 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 (DI) and Treatment Department
- Expand nurses' knowledge of radiation oncology, interventional vascular radiology and neuroradiology to improve patient care in these specific areas
- Develop nurses' skills in performing image-guided procedures, including breast and brachytherapy, to improve the quality of patient care and optimize clinical outcomes

Specific Objectives

Module 1. Nursing in the Diagnostic Imaging (DI) and Treatment Department Nursing Consultation

- Delve into the competences to be developed by the nurse in the office
- Delve into understanding of the management of the prevention of unwanted effects after contrast administration, both in allergic patients and in patients with renal insufficiency
- Establish priorities in the different management activities
- Delve into the recommendations of the evaluating physicians of the diagnostic tests and to communicate them if necessary to whom it is necessary, managing an agenda of case managers and secretaries, as well as general practitioners

Module 2. Computerized Tomography

- Discover the history, physical fundamentals, elements and components involved in CT imaging
- Delve into the objectives of the scan: muscle and bone disorders, bone tumors and fractures; localization of tumors, infections and blood clots
- Describe the applications of the procedures in early detection, disease monitoring, treatment effectiveness and detection of injuries
- Understand the risks of the explorations: exposure to radiation, reactions to contrast material and those derived from sedation
- Develop the necessary competences to elaborate the nursing care process for patients undergoing a CT examination

Module 3. Magnetic Resonance

- Learn the history, physical fundamentals, elements and components involved in MR imaging
- Delve into 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

You will conclude this program with a better understanding of the safety management of the risks to which patients and healthcare professionals are exposed in a CT scan"

03

Course Management

Students who take this university program will have at their disposal an excellent faculty composed of professionals with an extensive professional career in the health field and more specifically in Diagnostic Imaging and Treatment. Their vast background will allow the graduates to have the most exhaustive information, provided by real experts, whose proximity will also allow them to solve any doubts they may have about the content of this top quality program.

Consolidated professionals of Diagnostic Imaging (DI) and Treatment Areas of reference hospitals integrate this 100% online Postgraduate Diploma"

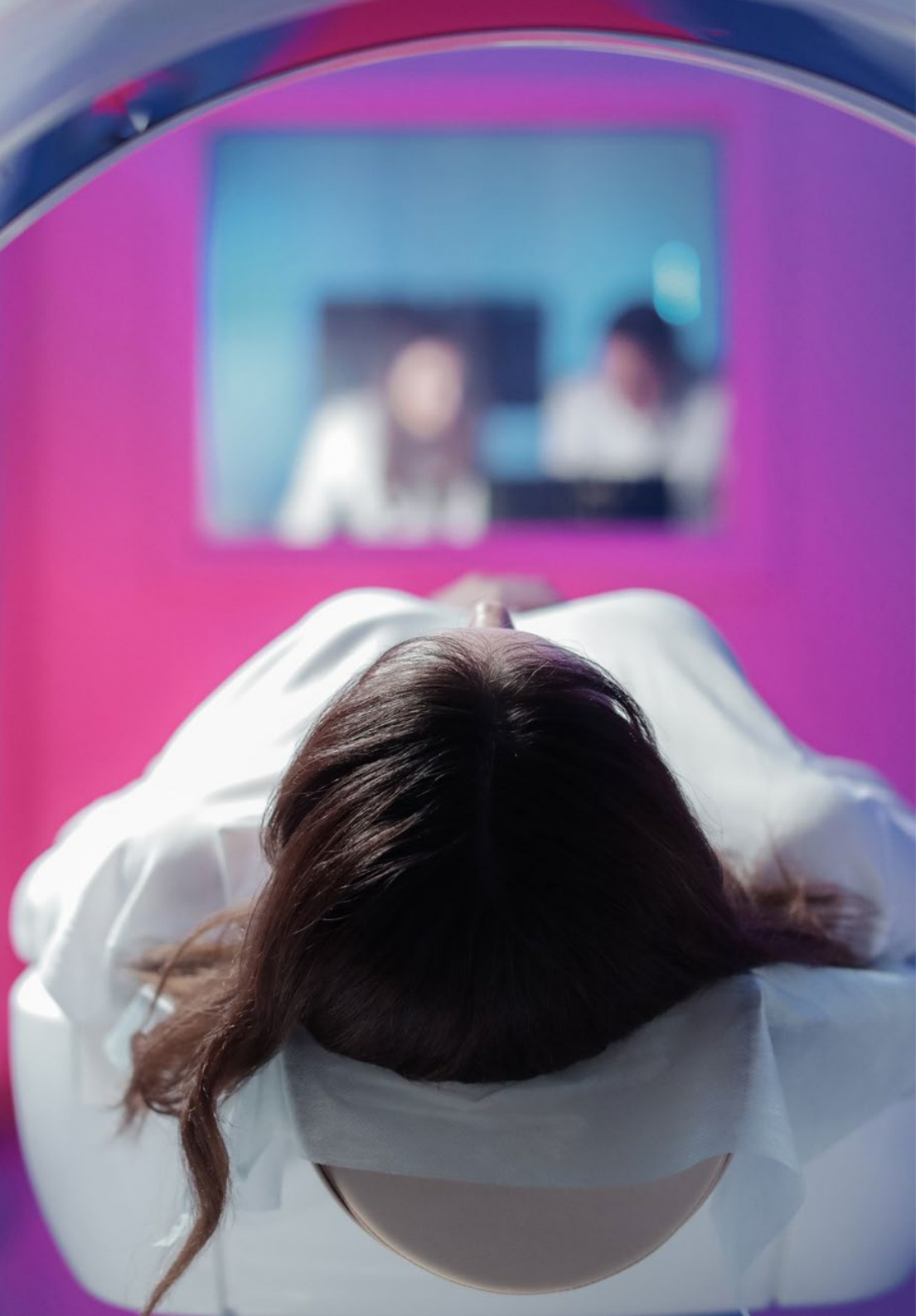
Management

Ms. Viciana Fernández, Carolina

- Nurse in the Radiodiagnosis and Nuclear Medicine Department at the Central University Hospital of Asturias
- University Diploma in Nursing
- 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, 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
- University Diploma in Nursing
- Master's Degree in Prevention Management in the Company
- Master's Degree in Emergency Medicine
- 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 High School Education Teachers
- Radioactive Facilities Operator License in Nuclear Medicine by the Nuclear Safety Council



Professors

Ms. Álvarez Noriega, Paula

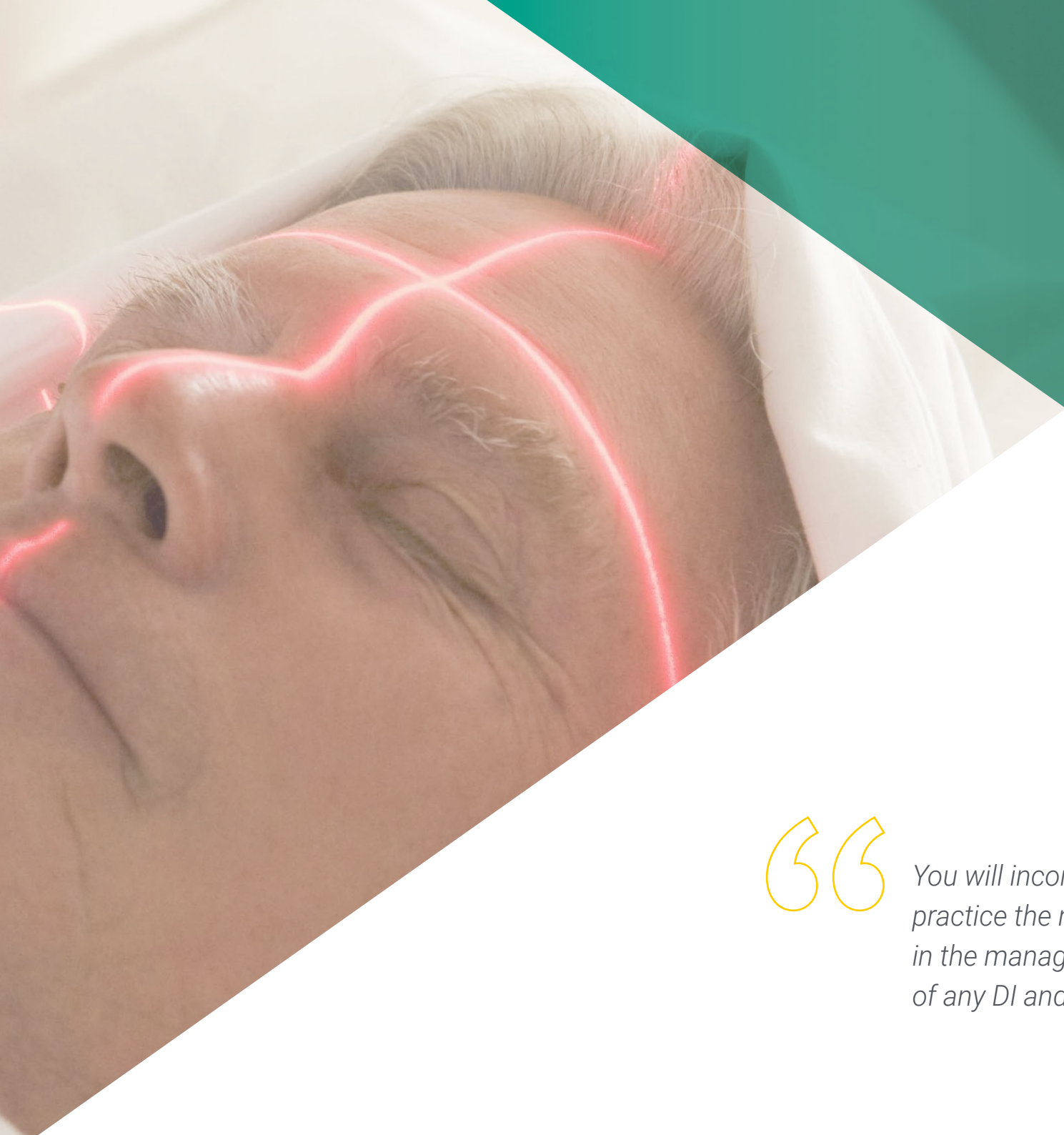
- Supervisor of the Radiodiagnostics Service at the Central University Hospital of Asturias
- Honorary Collaborator attached to the Department of Medicine of the University of Oviedo and the Adolfo Posada Institute
- University Diploma in Nursing
- Master's Degree in Prevention Management in the Company
- Master's Degree in Support Treatment and Palliative Care in Oncology Patients
- University Expert in Hemotherapy Nursing
- Nuclear Medicine Radioactive Installations Operator License by the Nuclear Safety Council

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

The urgent need for nursing professionals specialized in DTI service is reflected in the content of this program. A study plan that will take the graduates over 6 months to be up to date on the processes of screening, administration of contrasts, allergies and test management. In addition, thanks to the innovative didactic material, you will delve much more quickly into the advances in diagnostic tests performed by CT and MRI. An excellent updating process that only TECH, the largest digital university in the world, offers.



You will incorporate to your usual practice the most effective protocols in the management of imaging tests of any DI and Treatment Department"

Module 1. Nursing in the Diagnostic Imaging (DI) and Treatment Department Nursing Consultation

1.1. Nursing Role in a DI and Treatment Department
- 1.1.1. Definition of Advanced Practice Nursing (APN)
- 1.1.2. History of Advanced Practice Nursing
- 1.1.3. Current Status of Advanced Practice Nursing

1.2. Role of the APN in the Nursing Consultation of a DI and Treatment Department
- 1.2.1. Historical Development of a DI and Treatment Department
- 1.2.2. Historical Evolution of Care in a DI and Treatment Department
- 1.2.3. Role of the APN in the Nursing Consultation of a DI and Treatment Department

1.3. Contrast Media in Diagnostic Imaging and Treatment
- 1.3.1. Definition and Types of Contrast Media
- 1.3.2. Chemical Properties of Contrast Media
- 1.3.3. Classification of Contrast Media
- 1.3.4. Routes of Administration of Contrast Media in Diagnostic Imaging and Treatment

1.4. Adverse Reactions Due to Contrast Media Administration
- 1.4.1. Toxicity Due to Contrast Media Administration
- 1.4.2. Renal Toxicity Due to Contrast Media Administration
- 1.4.3. Hypersensitivity Reactions Due to the Administration of Contrast Media
- 1.4.4. Others Toxicity Due to Contrast Media Administration
- 1.4.5. Extravasation of Peripheral Venous Route Due to Contrast Administration

1.5. Contrast Screening. The Importance of Renal Function in the Administration of Contrast Media
- 1.5.1. Contrast-induced Nephropathy. Definition
- 1.5.2. Risk Factors in Contrast-Induced Nephropathy
- 1.5.3. Risk Diagnosis in Contrast-Induced Nephropathy

1.6. Contrast Screening. Role of the APN in the Indication of an Iodinated Contrast Media according to Renal Function
- 1.6.1. Review of the Patient's Medical History
- 1.6.2. General Recommendations Before the Administration of an Iodinated Contrast Media
- 1.6.3. Prevention and Follow-up of Iodinated Contrast-induced Nephropathy

1.7. Contrast Screening. Role of APN in the Administration of Other Contrast Media According to Renal Function
- 1.7.1. Impact of the Administration of Non-Iodinated Contrast Media on Renal Function
- 1.7.2. Gadolinium-based Contrast Media and Renal Function
- 1.7.3. Impact of Other Contrast Media on Renal Function

1.8. Contrast Screening. Hypersensitivity Reactions to Contrast Media
- 1.8.1. Definition of Hypersensitivity Reaction
- 1.8.2. Classification of Hypersensitivity Reactions
- 1.8.3. Risk Factors for Hypersensitivity Reactions to Contrast Media
- 1.8.4. Diagnosis of a Hypersensitivity Reactions to Contrast Media

1.9. Contrast Screening. Role of the APN in the Presence of a Previous History of Contrast Hypersensitivity Reactions
- 1.9.1. Review of the Patient's Medical History
- 1.9.2. Prevention of Hypersensitivity Reactions to Iodinated Contrast Media
- 1.9.3. Prevention of Hypersensitivity Reactions to Gadolinium-based Contrast Media
- 1.9.4. Prevention of Hypersensitivity Reactions to Other Contrast Agents

1.10. Management of Imaging Tests
- 1.10.1. The Importance of the Diagnostic Imaging and Treatment Service in the Health System
- 1.10.2. Nursing Knowledge
- 1.10.3. The Need to Record

Module 2. Computerized Tomography

2.1. CT and Components of a Unit
- 2.1.1. History and Evolution of Computerized Tomography
- 2.1.2. Definition and Application
- 2.1.3. Physical Fundamentals, Elements and Components involved in Computed Tomography Imaging.
- 2.1.4. Contrasts Acquisition Time and Resolution
- 2.1.5. Artifacts
- 2.1.6. Room Characteristics

2.2. Scanning Objectives
- 2.2.1. Introduction
- 2.2.2. Muscle and Bone Disorders, Bone Tumors, and Fractures.
- 2.2.3. Localization of Tumors, Infections or Blood Clots
- 2.2.4. Guidance for Procedures such as Surgeries, Biopsies and Radiotherapy
- 2.2.5. Detection and Control of Diseases such as Cancer, Heart Disease, Lung Nodules and Liver Tumors

2.2.6. Monitoring the Effectiveness of Certain Treatments
2.2.7. Detecting Internal Injuries and Internal Bleeding
2.3. Risks of the Exploration
2.3.1. Radiation Exposure
2.3.2. Reactions to Contrast Material
2.3.3. Sedation
2.4. Neurological Examination
2.4.1. Description and Protocols
2.4.2. Preparation
2.4.3. Nursing Care Process
2.5. Musculoskeletal Examination
2.5.1. Description and Protocols
2.5.2. Preparation
2.5.3. Nursing Care Process
2.6. Vascular Explorations I
2.6.1. Description and Protocols
2.6.2. Preparation
2.6.3. Nursing Care Process
2.7. Vascular Explorations II. Cardiac Examinations
2.7.1. Description and Protocols
2.7.2. Preparation
2.7.3. Nursing Care Process
2.8. Examination of Abdomen
2.8.1. Description and Protocols
2.8.2. Preparation
2.8.3. Nursing Care Process
2.9. Pediatric Examinations
2.9.1. Description and Protocols
2.9.2. Preparation
2.9.3. Nursing Care Process
2.10. Interventional Procedures
2.10.1. Description and Protocols
2.10.2. Preparation
2.10.3. Nursing Care Process

Module 3. Magnetic Resonance

3.1. What is an MRI?
3.1.1. Introduction
3.1.2. History of Magnetic Resonance Imaging and its Evolution
3.1.3. Definition and Application
3.1.4. Physical Fundamentals, Elements and Components involved in Magnetic Resonance Imaging
3.2. Components of a Magnetic Resonance Equipment
3.2.1. Contrasts, Acquisition Time and Resolution
3.2.2. Artifacts
3.2.3. Room Characteristics
3.3. Scanning Objectives
3.3.1. Introduction
3.3.2. Central Nervous System Diagnostic Studies
3.3.3. Abdominal and Gynecological Diagnostic Studies
3.3.4. Diagnostic Studies of Breast and Pulmonary Angiography
3.3.5. Diagnostic Studies of Musculoskeletal Lesions
3.3.6. Cardiac Diagnostic Studies
3.4. Risks of the Exploration
3.4.1. Implanted Metal Objects
3.4.2. Reactions to Contrast Material
3.4.3. Sedation-Related Risks
3.5. Neurological Examination
3.5.1. Description and Protocols
3.5.2. Preparation
3.5.3. Nursing Care Process

3.6. Pediatric Examinations
- 3.6.1. Description and Protocols
- 3.6.2. Preparation
- 3.6.3. Nursing Care Process

3.7. Musculoskeletal Examination
- 3.7.1. Description and Protocols
- 3.7.2. Preparation
- 3.7.3. Nursing Care Process

3.8. Abdominal and Gynecological Examinations
- 3.8.1. Description and Protocols
- 3.8.2. Preparation
- 3.8.3. Nursing Care Process

3.9. Thoracic Explorations: Breast and Pulmonary Angiography
- 3.9.1. Description and Protocols
- 3.9.2. Preparation
- 3.9.3. Nursing Care Process

3.10. Cardiac Examinations
- 3.10.1. Description and Protocols
- 3.10.2. Preparation
- 3.10.3. Nursing Care Process

An academic journey that will lead you to increase your competences in cardiac, thoracic or gynecological MRI procedures"

05

Methodology

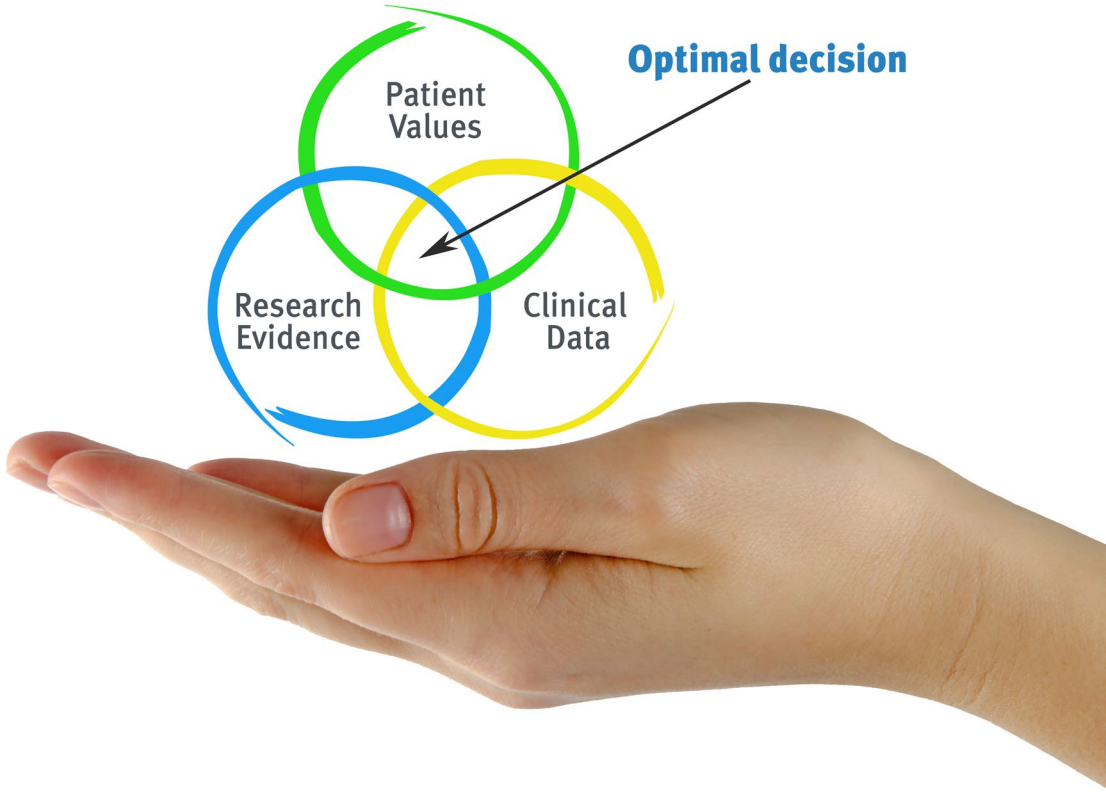
This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

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.

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:

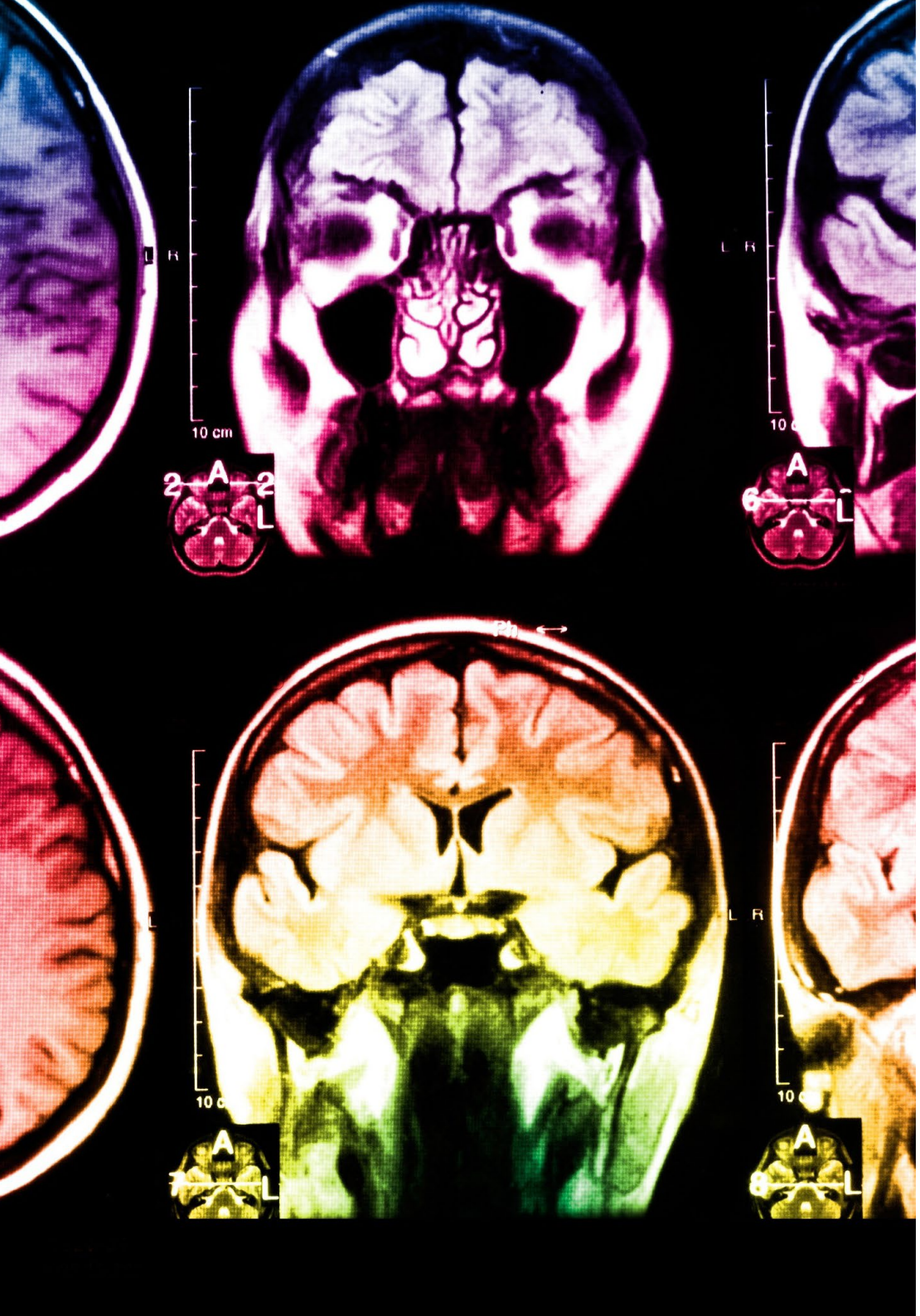
1. Nurses who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the nursing professional to better integrate knowledge acquisition into 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

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

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 prepared more than 175,000 nurses with unprecedented success in all specialties regardless of practical workload. Our educational 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.

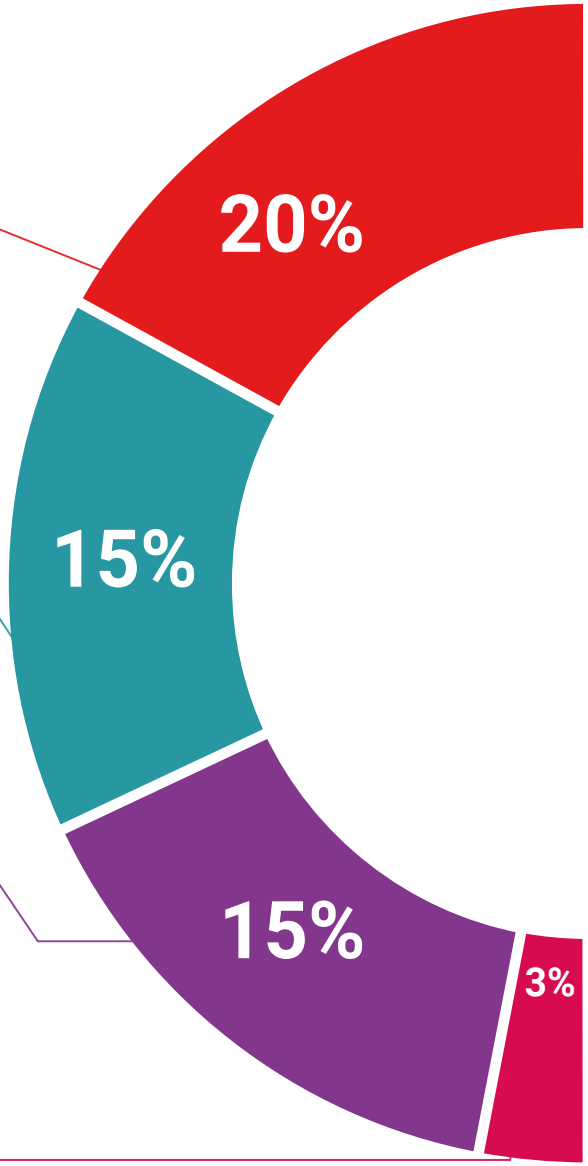
Interactive Summaries

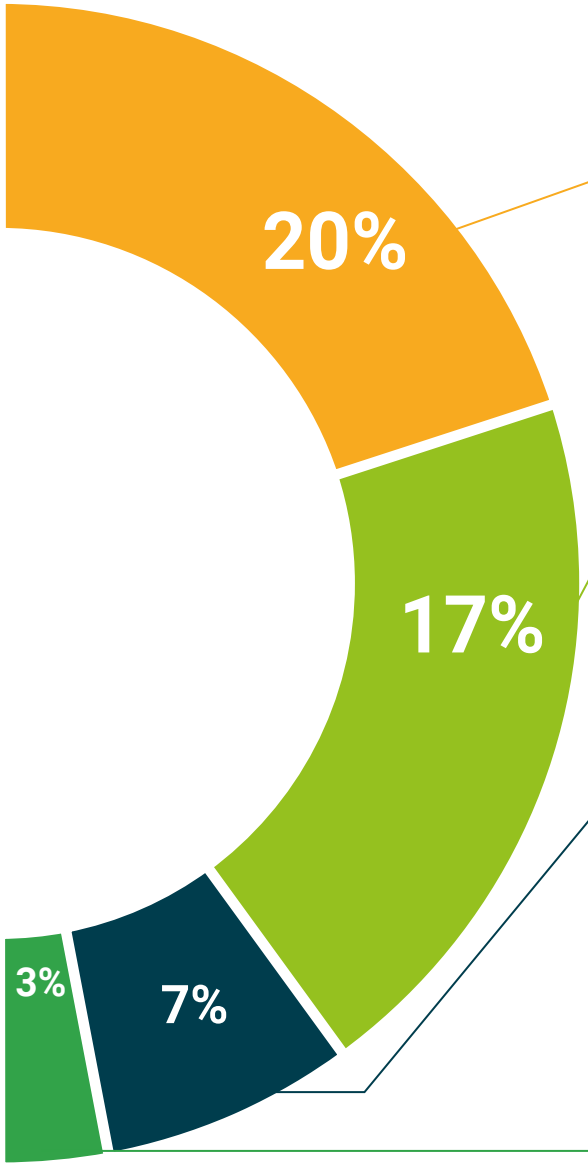
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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 Diploma in Nursing in the Diagnostic Imaging (DI) and Treatment Department guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma 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 Diploma in Nursing in the Diagnostic Imaging (DI) and Treatment Department** 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 Diploma in Nursing in the Diagnostic Imaging (DI) and Treatment Department**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**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Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Diploma in Nursing in the Diagnostic Imaging (DI) and Treatment Department

This is a private qualification of 540 hours of duration equivalent to 18 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

*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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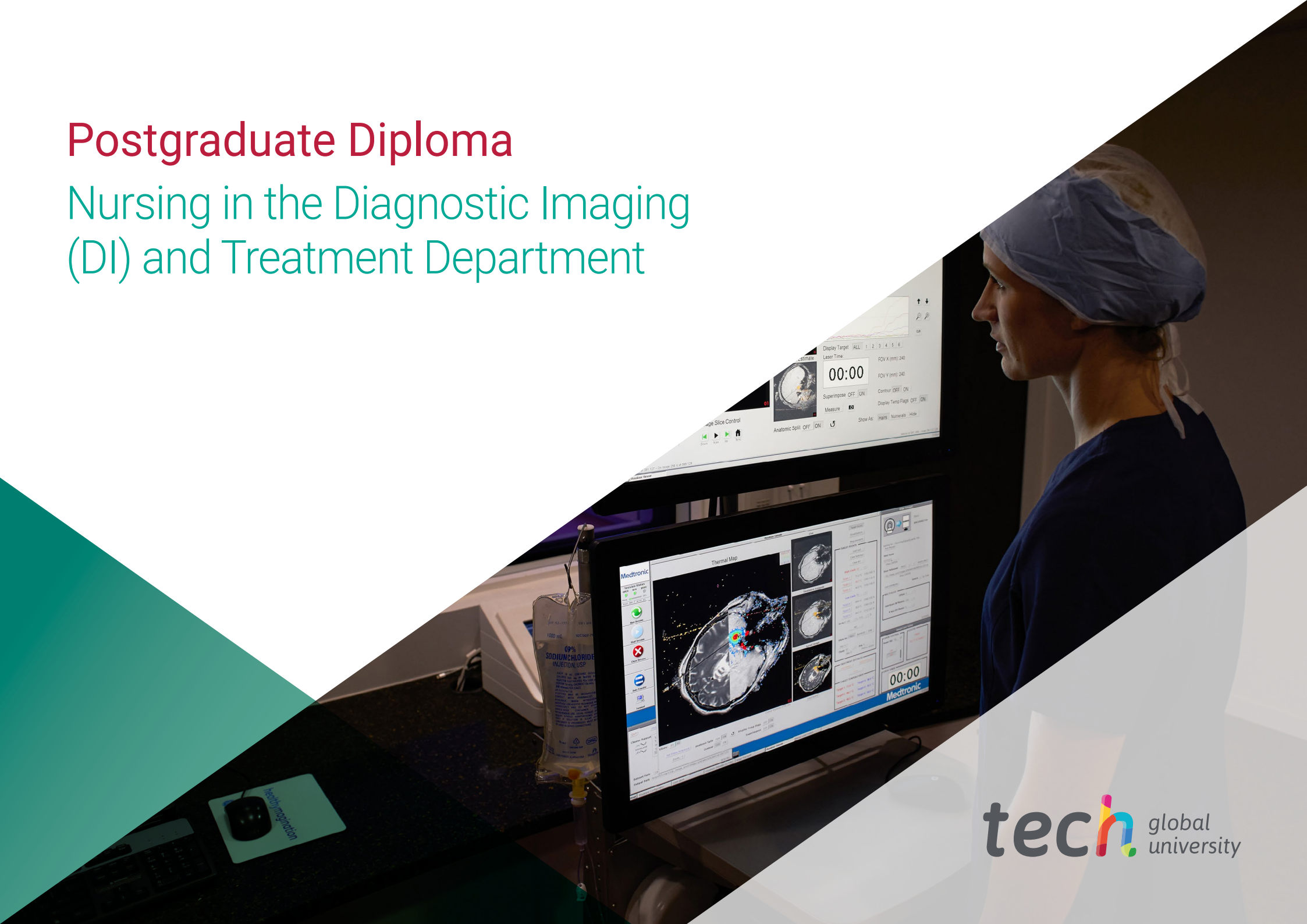

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