

# Postgraduate Certificate

## Healthcare Technology and Patient Safety for Nursing



## Postgraduate Certificate Healthcare Technology and Patient Safety for Nursing

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/nursing/postgraduate-certificate/healthcare-technology-patient-safety-nursing](http://www.techtute.com/us/nursing/postgraduate-certificate/healthcare-technology-patient-safety-nursing)

# Index

01

Introduction

---

*p. 4*

02

Objectives

---

*p. 8*

03

Course Management

---

*p. 12*

04

Structure and Content

---

*p. 18*

05

Methodology

---

*p. 22*

06

Certificate

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*p. 30*

# 01

# Introduction

Safe medical care is a priority for any healthcare system. According to several recent research and analysis conducted by the WHO and recognized scientific publications such as the British Medical Journal, medical errors are one of the leading causes of death worldwide, and many of them are preventable. From this perspective, TECH has designed a program aimed at nursing professionals to update their knowledge to ensure the safety of patients during their care, addressing key issues such as risk assessment in different health areas, automation of care tasks and health technologies. All this, through a 100% online format and Relearning methodology.



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*Enter the world of Big Data in healthcare and artificial intelligence, and revolutionize healthcare with this 100% online Posgraduate Certificate”*

Technological advances have revolutionized various scientific fields, including the healthcare sector. A clear example of this is artificial intelligence (AI) and Big Data, which enable continuous monitoring of patients and the processing of large volumes of data in real time. These technologies facilitate the early identification of patterns and risks, which helps medical professionals prevent serious complications and improve the quality of care. Among the most prominent applications are the early detection of sepsis and the monitoring of vital signs in critically ill patients.

In this scenario, TECH has developed the Postgraduate Certificate in Healthcare Technology and Patient Safety for Nursing, which seeks to update nursing professionals in the latest technological advances in the healthcare field to ensure patient safety during clinical care.

This 100% online program focuses on key aspects of health technology assessment, patient safety and best practices in the clinical laboratory. The syllabus covers topics such as the evaluation of healthcare algorithms based on artificial intelligence, the evaluation of diagnostic tests, the global and integrated care of the hospitalized patient, the impact of new technologies on patient safety and quality of care, among others.

The Postgraduate Certificate uses the Relearningpedagogical methodology to offer an effective and flexible educational experience. This pedagogical approach is based on repetition and reinforcement of key concepts through exposure to different academic resources and the use of technology to facilitate learning. In addition, the course is 100% online, allowing participants to access resources anytime, anywhere, and to organize their own pace of study. This offers great flexibility and adaptability to the needs and schedules of students.

This **Postgraduate Certificate in Healthcare Technology and Patient Safety for Nursing** 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 Healthcare Technology and Patient Safety
- ◆ 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 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



*Stand out in the use of descriptive, predictive and prescriptive analytics, and become a reference in the nursing field"*

“

*Get up to speed in the handling of Machine Learning and natural language processing to improve patient safety”*

*A program that will allow you to compare the current state of the art in healthcare technology at an international level and broaden your global perspective.*

*You will achieve your objectives thanks to an extensive library of teaching resources and accompanied by the best professionals.*

The program's teaching staff includes professionals from sector who contribute their work experience to this educational 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.

The design of this program focuses on Problem-Based Learning, by means of which the professionals must try to solve the different professional practice situations that are presented throughout the academic course. For this purpose, the students will be assisted by an innovative interactive video system created by renowned experts.



# 02 Objectives

The Postgraduate Certificate in Health Technology and Patient Safety for Nursing has been designed with the aim of updating health professionals in this area, improving their skills and competencies in these fields. This updating approach allows addressing topics of great importance nowadays, such as automation of healthcare tasks, economic evaluation of healthcare technologies, among others. In this way, students will be better equipped to prevent and reduce risks and errors in their healthcare practice and provide more effective and safer care for patients.





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*Get updated on diagnostic test evaluation models and improve patient safety”*



## General Objectives

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- ◆ Promote safe working environments for patients and professionals
- ◆ Promote research, innovation and training in patient safety
- ◆ Analyze the management of adverse events and their improvement plans to avoid them
- ◆ Deepen in the concepts, methods and strategies for the improvement of patient safety in healthcare institutions
- ◆ Analyze patient safety strategies approached from different healthcare areas



*Don't get left behind. Take the next step towards economic evaluation of healthcare technologies and maximize your efficiency in the sector"*





## Specific Objectives

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- Evaluate health technologies at the international level. Current Situation and Future Prospects
- Evaluate healthcare technologies, their impact and associated costs
- Deepen the role of the Electronic Health Record in Patient Safety and Quality of Care
- Incorporate the Big Data and Artificial Intelligence
- Delve into the exploitation of the electronic health record for patient safety and Natural Language Processing to extract knowledge in patient safety

# 03

## Course Management

In its quest to offer an elite education, TECH has assembled for this Postgraduate Certificate a highly qualified teaching team with vast experience in the field of healthcare technology and patient safety. These experts are committed to providing the tools and knowledge necessary for nursing professionals to acquire a solid and up-to-date knowledge in these areas and to improve their skills and competencies in their daily work. Students participating in the program will have the opportunity to learn from a renowned faculty in the field, ensuring a high quality educational experience.



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*A teaching team that will give you  
the necessary guidelines to be  
part of the future of health care”*

## Management



### Dr. Paredes Esteban, Rosa María

- ♦ Head of Service and Director of the Pediatric Surgery Clinical Management Unit of the Reina Sofia Hospital
- ♦ Specialist in Pediatric Surgery Reina Sofia Hospital
- ♦ Specialist in Pediatric Surgery at the Medical-Surgical Hospital of Jaén
- ♦ Responsible for Pediatric Surgery training at the Reina Sofia Hospital
- ♦ President of the Spanish Society of Pediatric Surgery
- ♦ Coordinator of the Bioethics Commission of the Spanish Society of Pediatric Surgery
- ♦ Coordinator of the Vascular Anomalies Committee of the University Hospital Reina Sofía
- ♦ Coordinator of the Living Donor Transplant Commission (Renal and Hepatic) of Córdoba
- ♦ PhD in Medicine and Surgery from the University of Granada
- ♦ Degree in Medicine and Surgery from the University of Granada
- ♦ Member of: European Society of Pediatric Endoscopic Surgery, Spanish Society of Pediatric Surgery, Editorial Committee of the journal of the Spanish Society of Pediatric Surgery, Scientific Evaluation Committee of the Spanish Society of Pediatric Surgery

## Professors

### Dr. Salcedo Leal, Inmaculada

- ♦ Lecturer Head of Department of Preventive Medicine and Public Health at the Reina Sofia University Hospital in Córdoba
- ♦ Evaluator of the Bank of State Evaluation Agency (MINECO)
- ♦ Interlocutor in the Junta de Andalucía in the Phase Reduction of Isolation and Social Distancing Measures
- ♦ Associate Professor in the Department of Medical and Surgical Sciences, School of Medicine and Nursing, University of Córdoba
- ♦ PhD in Medicine and Surgery from the University of Cordoba
- ♦ Specialist in Preventive Medicine and Public Health at the Reina Sofia Hospital in Cordoba
- ♦ Specialist in Family and Community Medicine at the Virgen Macarena Hospital in Seville and the Pino Montano Health Center in Seville
- ♦ Master's Degree in Public Health and Health Administration from the Andalusian School of Public Health of Granada
- ♦ Postgraduate Diploma in Quality from Health Institutions by the Andalusian School of Public Health of Granada
- ♦ Member of: President of the National Commission of the Specialty of Preventive Medicine and Public Health, Vice-President of the Spanish Society of Preventive Medicine, Public Health and Health Management (SEMPSPGS), Vice-President of the Andalusian Society of Preventive Medicine, Public Health and Health Management (SAMPSPGS), Spokesperson of the Ministry of Health and Families of the Andalusian Regional Government in the Coronavirus expert group, Spokesperson of the Council of High Impact Public Health Alerts

### Dr. Armengol de la Hoz, Miguel Ángel

- ♦ Telecommunications Specialist
- ♦ PhD Cum Laude for his thesis on the Promotion, Integration, Management and Processing of Open Big Data Repositories of Hospitalized Critical Patients, carried out at the Department of Biomedical Engineering of the Polytechnic University of Madrid
- ♦ Master's Degree in Biomedical Engineering, Specialty in Biomedical Imaging and Biomedical Devices, Polytechnic University of Madrid
- ♦ Telecommunications Engineer (Certificate of Professional Aptitude in Spain), Alfonso X el Sabio University
- ♦ Degree in Telecommunication Engineering, specializing in Image and Sound; Alfonso X el Sabio University

### Dr. Serrano Ortiz, Álvaro

- ♦ Specialist in Preventive Medicine and Public Health at the University Hospital Reina Sofía
- ♦ Researcher at the Maimonides Institute of Biomedical Research of Cordoba, in the Associate Group of Preventive Medicine and Public Health (GA13)
- ♦ Teaching collaborator of the Preventive Medicine and Public Health Service of the Faculty of Medicine of Córdoba (UCO.)
- ♦ Degree in Medicine from the University of Córdoba
- ♦ Master's in Public Health and Health Management at the Andalusian School of Public Health

**Dr. Ruiz Salcedo, Sofía**

- ◆ Specialist in Family and Community Medicine
- ◆ Evaluation of compliance with the special vaccination schedule in rheumatology patients at the University Hospital Reina Sofía
- ◆ Lecturer in Continuing Education in Respiratory Pathology for Family and Community Medicine Residents and Tutors at the Multiprofessional Family and Community Care Teaching Unit of Córdoba

**Dr. Díaz Romero, Salvador**

- ◆ Specialist in Preventive Medicine and Public Health
- ◆ Collaborating teacher with the Preventive Medicine and Public Health Service of the Reina Sofia University Hospital in teaching at the University of Cordoba
- ◆ Graduate in Medicine at the University of Valladolid
- ◆ Master's Degree in Public Health and Health Management at the Andalusian School of Public Health

**Dr. Martínez Noguerras, Rafael**

- ◆ Head of the Preventive Medicine and Public Health Service of the Jaén Hospital Complex
- ◆ Specialist in Preventive Medicine and Public Health
- ◆ Researcher in projects related to adverse events in hospital centers and Patient Safety
- ◆ Degree in Medicine





**Dr. Romero Cabrera, Juan Luis**

- ◆ Internal Medicine Area Specialist at Reina Sofia University Hospital
- ◆ Specialty in Internal Medicine at Reina Sofia University Hospital
- ◆ Honorary collaborator of the Department of Medical and Surgical Sciences, School of Medicine and Nursing, University of Córdoba
- ◆ UB-SEMI Postgraduate Master's Degree in Clinical Management of Systemic Autoimmune Diseases from the University of Barcelona
- ◆ Master in Infectious Diseases and Antimicrobial Treatment by Cardenal Herrera University
- ◆ Master's Degree in Human Nutrition from the University of Cordoba
- ◆ Postgraduate Diploma in Cardiovascular Risk Management and Unit Management from the University of Cordoba
- ◆ Degree in Medicine from the University of Cadiz Academic Background

**Dr. López Moyano, Juan José**

- ◆ Faculty in Preventive Medicine, Public Health and Health Management at the University Hospital Reina Sofia
- ◆ Collaborator at the University of Cordoba with the Preventive Medicine and Public Health team of the Reina Sofia University Hospital
- ◆ Master's Degree in Public Health and Health Management at the Andalusian School of Public Health
- ◆ Medical Graduate from the University of Cadiz

# 04

# Structure and Content

The syllabus has been designed from the current requirements of health care, covering the latest scientific postulates in technologies oriented to the health sector and patient safety. Thus, a plan of studies has been established that delves into the methods of evaluation of technologies based on artificial intelligence, as well as risk assessment in healthcare environments and the use of Machine Learning to improve the quality of care. In addition, the program is delivered online, allowing students to access educational resources at any time and place, giving them the flexibility to adapt their study to their schedules and personal needs.



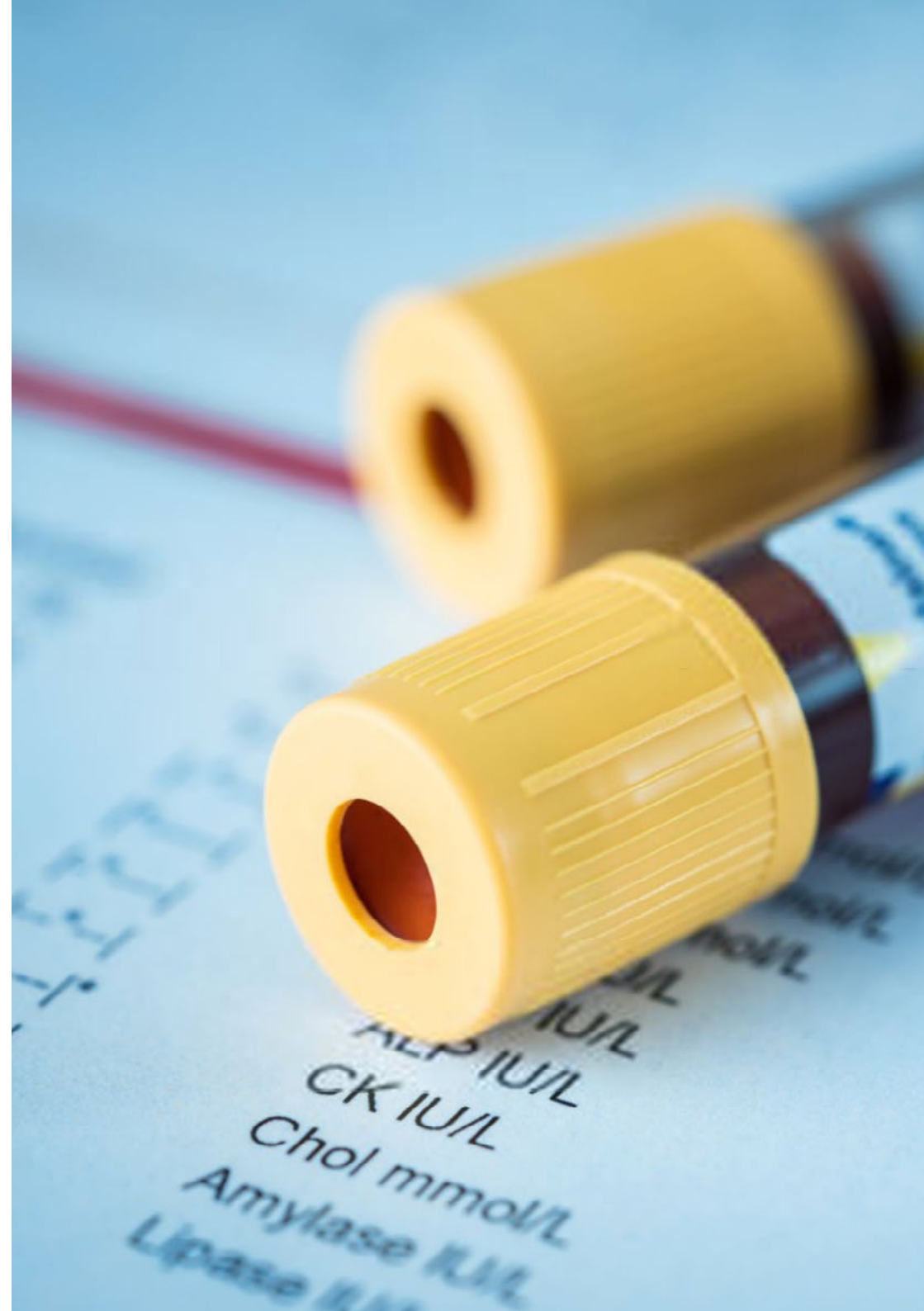


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*A study structure created to turn nursing professionals into leaders in the use of the most advanced healthcare technologies”*

## Module 1. Health Technology Assessment

- 1.1. Evaluation of Health Technologies based on Artificial Intelligence. Current Situation and Future Prospects
  - 1.1.1. Evaluation of health algorithms using a health technology assessment methodology
  - 1.1.2. Democratization of health data for clinical research
  - 1.1.3. International comparison of the current status
- 1.2. Evaluation of Safety, Efficacy and Clinical Effectiveness. GRADE Methodology
  - 1.2.1. Posing the clinical question
    - 1.2.1.1. Classification of the events or outcomes of interest
  - 1.2.2. Identification of the available scientific literature and evaluation of its quality
  - 1.2.3. Factors influencing the quality of the evidence
    - 1.2.3.1. Synthesis of evaluation results
  - 1.2.4. Development of the recommendation: Direction and strength
    - 1.2.4.1. Risk-benefit balance, resources-cost and other aspects
- 1.3. Evaluation of Diagnostic Tests
  - 1.3.1. Patients' opinion on their safety
  - 1.3.2. Areas of patient involvement
  - 1.3.3. Global Alliance for Patient Safety
    - 1.3.3.1. Patient associations in defense of patient safety at the international level
- 1.4. Economic Evaluation of Health Technologies
  - 1.4.1. Types of health costs
  - 1.4.2. Models in Economic Evaluation
  - 1.4.3. Types of studies in Economic Evaluation
- 1.5. Good Clinical Laboratory Practices
  - 1.5.1. Safety in Microbiology and Clinical Analysis
  - 1.5.2. Safe use of ionizing radiation
  - 1.5.3. Safety in Pathological Anatomy
- 1.6. Practical Experience in a Health Service
  - 1.6.1. Global and integrated care of the hospitalized patient
  - 1.6.2. Treatment of medical pathology based on scientific evidence
  - 1.6.3. Multidisciplinary management of the hospitalized patient



- 1.7. Automation of care tasks. Efficiency in routine work
  - 1.7.1. The Automation of Assistance Tasks
  - 1.7.2. International panorama of organizations or entities in charge of health technology assessment
  - 1.7.3. Agencies for the Evaluation of Health Technologies and Services of the National Health Systems
- 1.8. Impact of new technologies on Patient Safety and Quality of Care and their relationship with Health Outcomes
  - 1.8.1. ICTS. Risks or Benefits
  - 1.8.2. Detection of Errors with New Technologies
  - 1.8.3. Health outcomes
- 1.9. The Electronic Health Record in Patient Safety and Quality of Care
  - 1.9.1. Use of the electronic medical record for patient safety 2.9.2
  - 1.9.2. Use of Machine Learning to improve patient safety
  - 1.9.3. Natural Language Processing to extract knowledge in patient safety
- 1.10. Big Data in Health and Artificial Intelligence
  - 1.10.1. Health data applied to research
  - 1.10.2. Artificial intelligence for patient safety
  - 1.10.3. Descriptive, predictive and prescriptive analytics



*Master the GRADE methodology and improve the quality of your clinical decisions”*

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

The Postgraduate Certificate in Healthcare Technology and Patient Safety for Nursing guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.



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

This **Postgraduate Certificate in Healthcare Technology and Patient Safety for Nursing** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** via tracked delivery\*.

The diploma issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Certificate, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Certificate in Healthcare Technology and Patient Safety for Nursing**

Official N° of Hours: **150 h.**



\*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.



future  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present  
development language  
virtual classroom



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