

Postgraduate Certificate

Advanced Respiratory and
Cardiovascular Monitoring of the
Critically Ill Patient for Nursing





Postgraduate Certificate Advanced Respiratory and Cardiovascular Monitoring of the Critically Ill Patient for Nursing

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

Website: www.techtute.com/us/nursing/postgraduate-certificate/advanced-respiratory-cardiovascular-monitoring-critically-ill-patient-nursing

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01

Introduction

According to the World Health Organization, cardiovascular diseases cause the death of 17.9 million people per year. Faced with this situation, nurses play a crucial role in addressing these pathologies through the use of Advanced Life Support. For example, they perform constant monitoring to detect changes in cardiac function and respond quickly to prevent complications. However, technological complexity can be a challenge and make it difficult to interpret the data obtained. Hence the need for professionals to develop new skills to make appropriate clinical decisions. For this reason, TECH has developed an online program focused on the most innovative techniques for respiratory and cardiological monitoring.



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With this Postgraduate Certificate, based on Relearning, you will perform a more accurate and effective monitoring. You will contribute to the most informed clinical decisions!”

Monitoring of the Adult Critical Patient related to hemodynamic alterations is a fundamental part of nursing care in critical care settings. Thanks to the advent of Industry 4.0 and its advanced technologies, innovative non-invasive techniques have emerged in this field to ensure greater safety for critically ill patients. In this way, these procedures eliminate the risk of complications such as infection, bleeding and incision. In addition, they allow nurses to monitor users' hemodynamic function in real time, contributing to early detection of changes and immediate intervention in case of worsening.

In this context, TECH implements a revolutionary program in Advanced Respiratory and Cardiovascular Monitoring of the Critically Ill Patient for Nursing. Designed by authentic references in this field, the syllabus will provide the most cutting-edge non-invasive methods, including the NICOM® System for thoracic electrical bioresonance and Doppler Ultrasonography. In addition, the agenda will delve into the care that should be given to individuals connected to mechanical ventilation to prevent atelectasis and improve lung expansion. In addition, throughout the educational program, graduates will develop multiple technical skills to interpret data obtained from advanced monitoring equipment, such as oxygen saturation or capnography curve.

Moreover, the university program is supported by the revolutionary Relearning method, based on the reiteration of key concepts. Therefore, graduates will be able to reduce the long hours of study and memorization, since they will consolidate the most important terms of the syllabus in a simple way. Undoubtedly, a unique opportunity for updating through an educational experience that, with its methodology, makes it possible to reconcile professional and personal activities.

This **Postgraduate Certificate in Advanced Respiratory and Cardiovascular Monitoring of the Critically Ill Patient 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 Advanced Life Support and Critical Patient Monitoring
- ♦ The graphic, schematic and eminently practical contents with which it is conceived gather scientific and practical information on those disciplines that are indispensable for professional practice
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning
- ♦ Its special emphasis on innovative methodologies
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



You will study at your own pace, enjoying the convenience offered by TECH's 100% online modality"

“ *This academic itinerary has a wide range of multimedia resources such as interactive summaries, with the aim of providing you with a highly dynamic learning”*

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

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

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the course. For this purpose, students will be assisted by an innovative interactive video system created by renowned and experienced experts.

You will deepen in the management and installation of a ventilator to maintain optimal ventilation in patients with breathing difficulties.

Are you looking to specialize in the Esophageal Doppler technique? Master it through this university program in only 6 weeks.



02

Objectives

Through this innovative program, nurses will effectively use monitoring data to perform comprehensive assessments of critically ill patients. In this way, they will be able to identify problems and prioritize care. In turn, professionals will thoroughly examine the users' cardiovascular and hemodynamic function (including vital aspects such as heart rate or blood pressure). This will enable them to make informed clinical decisions and apply the most appropriate techniques to improve the stability of individuals. In addition, graduates will develop skills to optimize both ventilation and oxygenation of individuals.



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An exhaustive update on the care of patients with Non Invasive Mechanical Ventilation, with which you will significantly optimize the quality of your care work”



General Objectives

- ♦ Fundamentals of the most relevant aspects of Adult Critical Patient Monitoring
- ♦ Identify different types of Respiratory Monitoring and Hemodynamic Monitoring devices
- ♦ Use Respiratory and Cardiovascular Monitoring as tools to assess the hemodynamic and respiratory status of the Critically Ill Patient, identify signs of deterioration, and make clinical decisions based on objective data
- ♦ Raise awareness of the importance of Respiratory and Cardiovascular Monitoring in the Critically Ill Patient





Specific Objectives

- ◆ Establish the importance of invasive and noninvasive hemodynamic monitoring in the critically ill patient
- ◆ Determine the forms of respiratory support in the critically ill patient and its monitoring for Nursing
- ◆ Identify the importance of follow-up and monitoring in vascular access the administration of drugs and fluids for Nursing
- ◆ Evaluate advanced invasive and non-invasive devices in the hemodynamic alterations of the critically ill patient for Nursing

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A university program that will give your professional career the boost it needs to stand out in a field of specialization highly demanded by healthcare institutions”

03

Course Management

One of TECH's main distinguishing features is the high quality of its university programs. This is possible thanks to the effort made to bring together the best experts in each discipline for the design and delivery of their programs. In this sense, for this Postgraduate Certificate it counts on authentic references in the field of Advanced Life Support and Critical Patient Monitoring. These professionals stand out for their extensive work experience, where they have been part of prestigious hospitals. Committed to teaching, they have developed first class didactic contents that will be of full applicability for the graduates.





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An educated teaching team will accompany you throughout your learning process and will resolve any doubts you may have”

Management



Dr. Ramirez Torres, Carmen Amaia

- Nurse of the Intensive Care Unit at the San Pedro University Hospital
- Nurse of the Intensive Care Unit at the Hospital Viamed Los Manzanos
- Radiodiagnostic Nurse at Alliance Medical
- Nurse at the Residence for Elderly People of La Rioja
- Nurse in Gynecology and Obstetrics Operating Room at La Paz University Hospital
- Doctor in Nursing Sciences by the University Jaime I of Castellón
- Master's Degree in Management and Direction of Nursing Units from the University of La Rioja
- Master's Degree in Surgical Nursing, Medical Practice Group
- Graduate in Nursing from the Autonomous University of Madrid

Professors

Ms. Soto Pérez de Burgos, Andrea

- ◆ Instrumentalist Nurse in the Surgical Area of the Viamed Los Manzanos Hospital
- ◆ Assistance Nurse at the Igual a Ti Association, Logroño
- ◆ Assistance Nurse at the Santa María de Garoña Nuclear Power Plant
- ◆ Assistance Nurse at the San Prudencio Integral Care Center for the Elderly
- ◆ Assistance Nurse at the Palliative Care Center of the Organization of Médica Vitoria
- ◆ Assistance Nurse at the Resuscitation Unit of the Santiago Apóstol Regional Hospital
- ◆ Master's Degree in Proactive Nursing Care by the Catholic University of Avila
- ◆ University Diploma in Surgical Instrumentation in Orthopedic Surgery and Traumatology in Nursing
- ◆ University Diploma in Emergencies and Nursing Attention to Critical Patients
- ◆ University Graduate in Nursing from the University of León

Ms. Homobono Urabayen, Janire

- ◆ Nurse in the Intensive Care Unit at the Viamed Los Manzanos Clinic
- ◆ Nurse in the Health Service of La Rioja
- ◆ Nurse specialized in Residential Services Management
- ◆ Master's Degree in Intensive Care Nursing at the European University Miguel de Cervantes
- ◆ Degree in Nursing from the University of La Rioja

Dr. Sapiña Beltrán, Ester

- ◆ Nurse Specialized in Health Sciences and Biomedical Research
- ◆ Nurse in the Pneumology and Intensive Care Unit at the San Pedro University Hospital
- ◆ Nurse in the Sleep Unit and Internal Medicine at the Santa María Hospital
- ◆ Researcher at the Institute of Biomedical Research of Lleida
- ◆ Researcher at the Center for Biomedical Research Network on Respiratory Diseases (CIBERES)
- ◆ Nurse at Clinical Hospital of Valencia
- ◆ PhD in Health by the University of Lleida
- ◆ Master's Degree in Biomedical Research, University of Lleida
- ◆ Graduate in Nursing from the University of Lleida



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

This university program will provide nurses with a comprehensive view of respiratory and cardiovascular physiology, as well as the skills to operate advanced monitoring equipment. The academic itinerary will deepen the monitoring in Intensive Care through non-invasive techniques, which will reduce the risk of complications such as bleeding. Likewise, the syllabus will delve into the administration of drugs, taking into account the different routes of administration, as well as the preparation of fluids. In line with this, graduates will nurture their daily practice with the incorporation of the most innovative techniques for the care of critically ill patients during intubation processes.





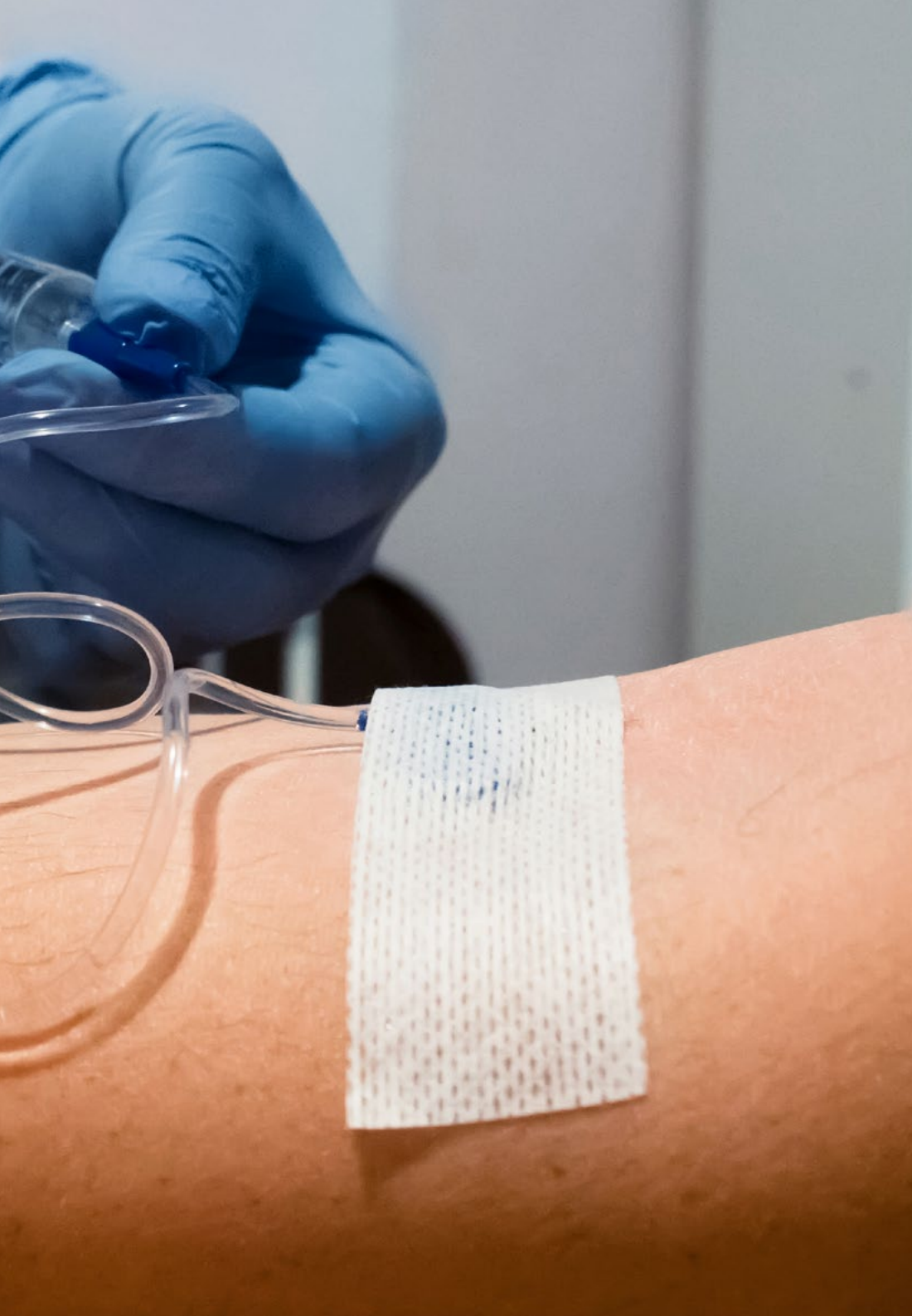
“

A high level syllabus that covers the latest scientific postulates to avoid adverse effects in patients with venous or arterial access”

Module 1. Advanced Respiratory and Cardiovascular Monitoring of the Adult Critical Care Patient for Nursing

- 1.1. Monitoring in Adult Intensive Care for Nursing
 - 1.1.1. Non-Invasive Monitoring
 - 1.1.2. Invasive Monitoring (PIA, PVC)
 - 1.1.3. Complementary Tests
- 1.2. Monitoring of the Critically Ill Adult Patient Connected to Mechanical Ventilation for Nursing
 - 1.2.1. Non-Invasive Mechanical Ventilation (NIMV)
 - 1.2.2. Care of the NIV Patient
 - 1.2.3. Invasive Mechanical Ventilation (IMV)
- 1.3. Monitoring of the Critically Ill Adult Patient Connected to Mechanical Ventilation for Nursing
 - 1.3.1. Management and Installation of a Respirator
 - 1.3.2. Monitoring of Ventilator Pressures
 - 1.3.3. Care During Intubation and Extubation
- 1.4. Monitoring of the Critically Ill Adult Patient Related to Respiratory Alterations for Nursing
 - 1.4.1. Monitoring of Anesthetic Gases
 - 1.4.2. Mixed Venous Saturation SvO₂
 - 1.4.3. Central Venous Saturation
- 1.5. Monitoring of the Adult Patient with Venous and/or Arterial Accesses for Nursing
 - 1.5.1. Types and Techniques of Administration Routes
 - 1.5.2. Maintenance of Administration Routes
 - 1.5.3. Recommendations to Avoid the Occurrence of Adverse Effects Related to Cannulation and Handling
- 1.6. Monitoring of the Critically Ill Adult Patient During the Administration of Drugs and Fluids for Nursing
 - 1.6.1. Other Routes of Administration: Enteral, Rectal, Intramuscular, Subcutaneous
 - 1.6.2. Preparation and Administration of Drugs and Fluids
 - 1.6.3. Patient Safety for Administration



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- 1.7. Monitoring of the Critically Ill Adult Patient Related to Hemodynamic Alterations for Nursing: Monitoring with Swan-Ganz Catheter, PICCO® System (Pulsion) and LiDCO Plus System
 - 1.7.1. Monitoring of the Patient with Swan-Ganz Catheter
 - 1.7.2. Monitoring with PICCO® System (Pulsion)
 - 1.7.3. Monitoring with LiDCO Plus System
 - 1.8. Monitoring of the Critically Ill Adult Patient Related to Hemodynamic Alterations for Nursing: Monitoring with FloTrac®/Vigileo® System, with ProAqt®(Pulsion) and with MostCare® System
 - 1.8.1. Monitoring with FloTrac®/Vigileo® System
 - 1.8.2. Monitoring with ProAqt®(Pulsion)
 - 1.8.3. Monitoring with MostCare® System
 - 1.9. Monitoring of the Critically Ill Adult Patient Related to Hemodynamic Alterations for Nursing: Monitoring with Modelflow-Nexfin System, NICO® and with Modelflow® System
 - 1.9.1. Monitoring with the Modelflow-Nexfin® System
 - 1.9.2. Monitoring with NICO® System
 - 1.9.3. Monitoring with Modelflow® System
 - 1.10. Monitoring of the Critically Ill Adult Patient Related to Hemodynamic alterations with Non-Invasive Techniques for Nursing
 - 1.10.1. NICOM® Thoracic Electrical Bioresonance System
 - 1.10.2. Doppler Ultrasonography (USCOM® system)
 - 1.10.3. Esophageal Doppler

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TECH offers you access to one of the best virtual libraries, to promote your continuous updating. What are you waiting for to enroll?"

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.



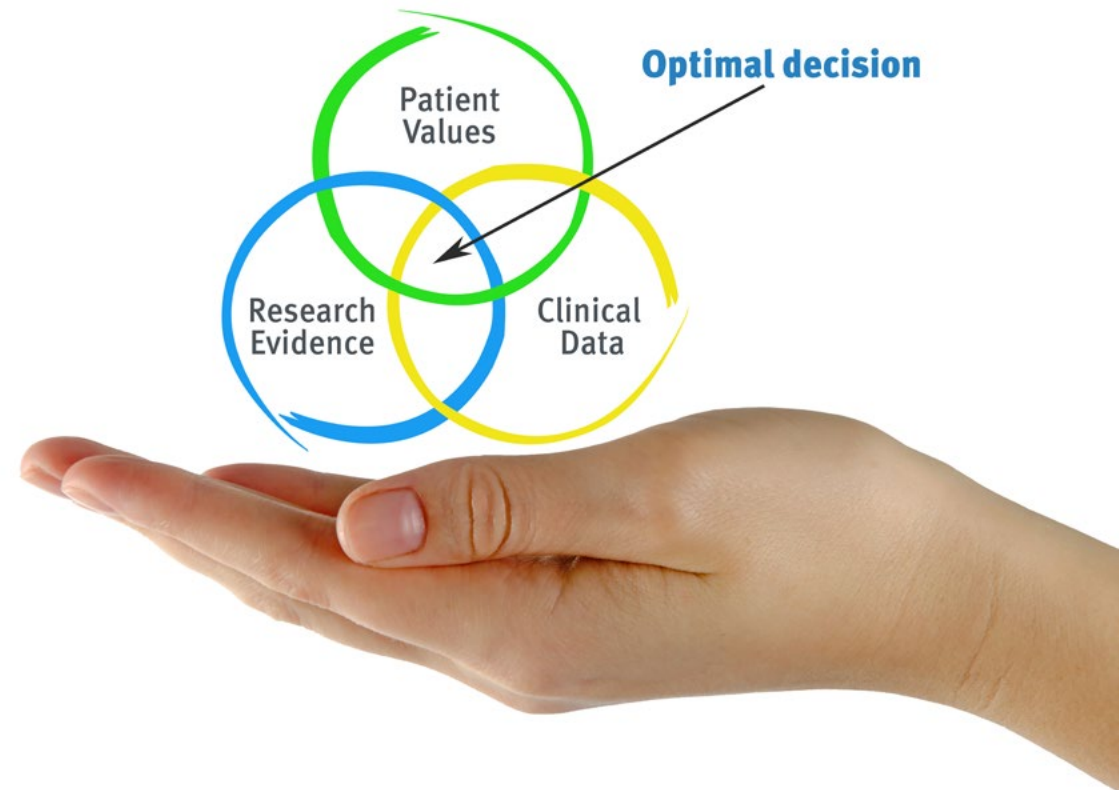
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Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

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.

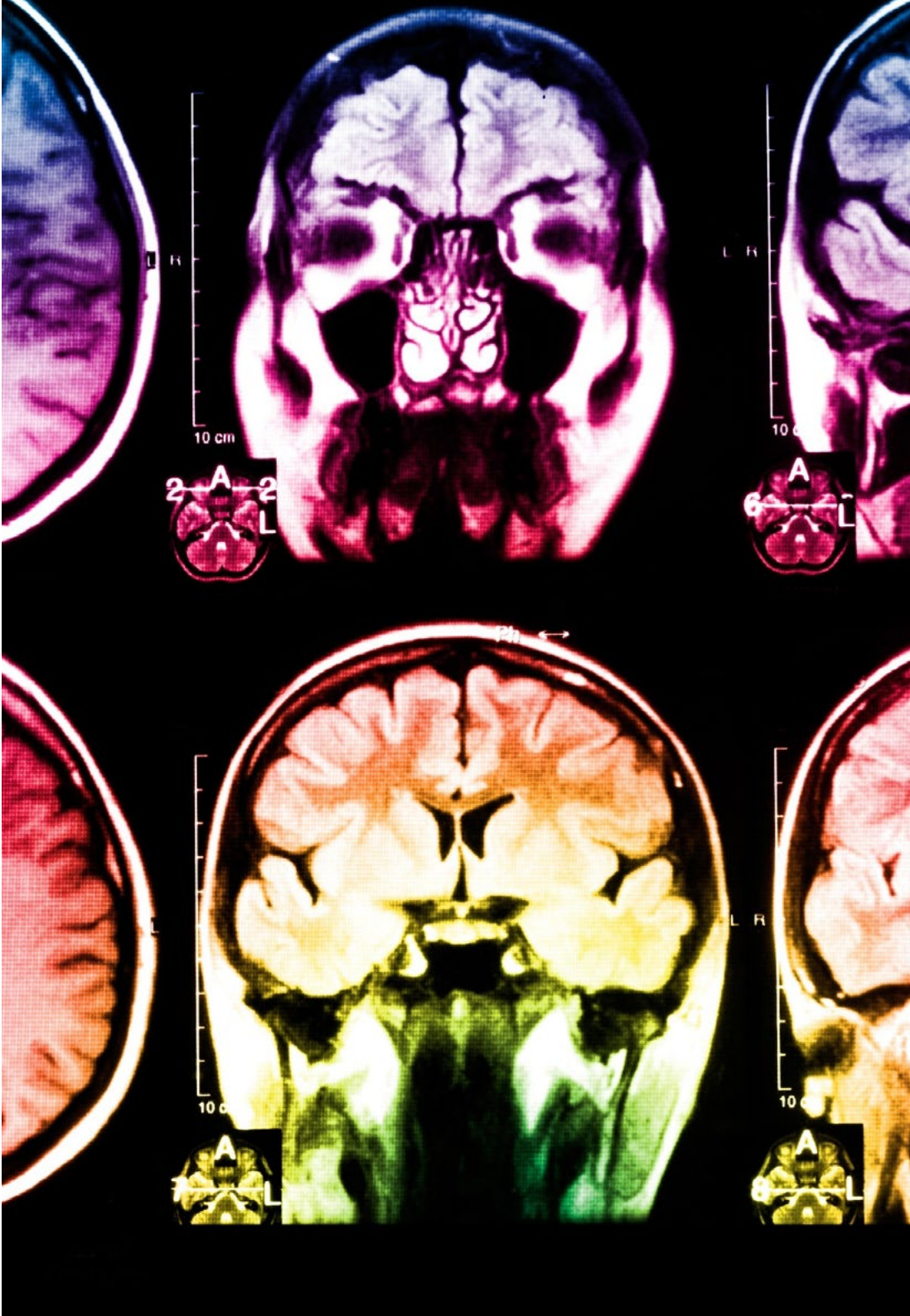
At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

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.

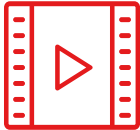
Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

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 adapted in 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

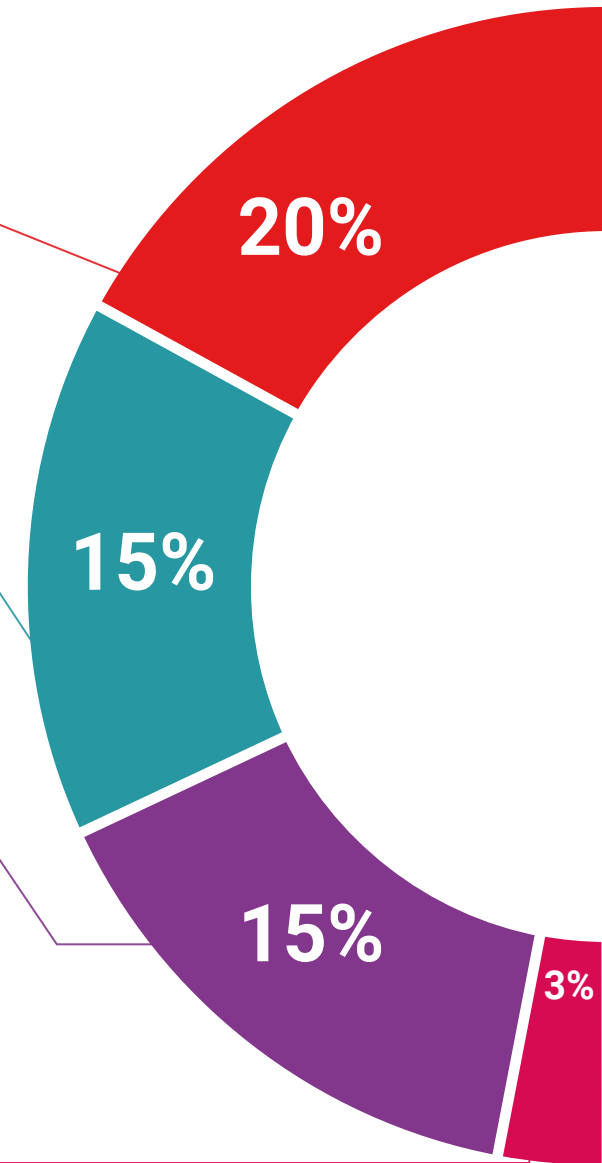
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

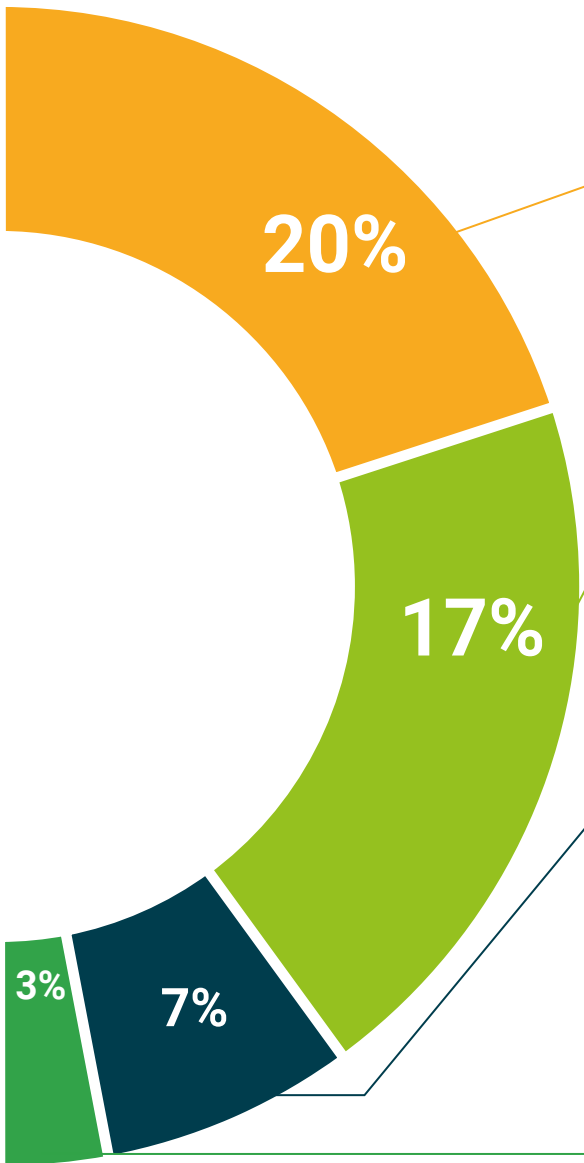
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



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

The student's knowledge is periodically assessed and re-assessed throughout the program, through evaluative and self-evaluative activities and exercises: in this way, students can check how they are doing in terms of 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 Advanced Respiratory and Cardiovascular Monitoring of the Critically Ill Patient 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 private qualification will allow you to obtain a **Postgraduate Certificate in Advanced Respiratory and Cardiovascular Monitoring of the Critically Ill Patient 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** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Advanced Respiratory and Cardiovascular Monitoring of the Critically Ill Patient for Nursing**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**





Postgraduate Certificate
Advanced Respiratory and
Cardiovascular Monitoring of the
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- » Modality: online
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Postgraduate Certificate

Advanced Respiratory and
Cardiovascular Monitoring of the
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