

# Postgraduate Certificate

Non-Invasive Ventilation in a Highly  
Qualified IRCU for Nursing





## Postgraduate Certificate Non-Invasive Ventilation in a Highly Qualified IRCU 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/non-invasive-ventilation-highly-qualified-ircu-nursing](http://www.techtute.com/us/nursing/postgraduate-certificate/non-invasive-ventilation-highly-qualified-ircu-nursing)

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# 01

# Introduction

IRCU's have experienced rapid growth in recent years, as they play a crucial role in the management of complex respiratory diseases. As a result, the NIMV monitoring strategies employed in these areas have been refined, as well as the care for the patient who requires a tracheostomy when unresponsive to Non-Invasive Mechanical Ventilation. Given the positive impact of these advances in avoiding clinical complications, nurses must identify them in order not to be left behind with respect to the evolution of this field. For this reason, TECH has developed this 100% online program, which provides the professional with this updated knowledge without the obligation of being subject to rigid study schedules.





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*Through this program, you will learn about the sophisticated care required by the patient who does not respond to NIMV and undergoes tracheostomy”*

Intermediate Respiratory Care Units (IRCUs) are increasingly accommodating patients requiring Non-Invasive Mechanical Ventilation (NIMV) to prevent respiratory complications. In parallel to this increase, the procedures and techniques used in these areas are constantly developing, with the aim of providing a range of care that contributes to improving the quality of life of hospitalized patients. As a result, nurses working in this health care field must be aware of these advances in order to optimize their professional update.

This is why TECH has created this Postgraduate Certificate, which allows students to explore the most up-to-date aspects of NIMV in the Intermediate Respiratory Care Unit. During 150 intensive hours of study, you will delve into the state-of-the-art strategies for monitoring the effectiveness of respiratory support during polygraphy or delve into the sophisticated nutritional strategies for the patient with prolonged hospitalization in the IRCU, among other issues.

All this, under a 100% online format that will allow students to update their knowledge from any time and place, as long as they have a device with an Internet connection. In the same way, they will enjoy a wide variety of didactic resources, highlighting the explanatory videos, simulations of real cases and interactive summaries. In this way, the professional will enjoy a completely enjoyable and effective study.

This **Postgraduate Certificate in Non-Invasive Ventilation in a Highly Qualified IRCU for Nursing** contains the most complete and up-to-date program on the market. The most important features include:

- ♦ Practical cases presented by specialists in Pulmonology
- ♦ The graphic, schematic, and practical contents which 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



*Thanks to this Postgraduate Certificate, you will identify the updated nutritional strategies to alleviate the needs of the patient with prolonged hospitalization"*



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*Through this program, you will delve into state-of-the-art procedures for monitoring the efficacy of respiratory support during polygraphy”*

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 academic year. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

*Get up to date from the comfort of your own home thanks to the 100% online modality that this program give you.*

*Optimize your health update through didactic formats such as video or simulation of real cases.*



# 02 Objectives

This program aims to provide a comprehensive refresher in Non-Invasive Mechanical Ventilation in an IRCU for the nurse. Through this educational experience, the student will explore step-down protocols or delve into the latest scientific evidence on the administration of inotropic and vasodilator medications in these areas.







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*Delve into the latest scientific evidence on the administration of inotropic and vasodilator medications in IRCUs”*



## General Objectives

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- ♦ Understand the importance and role of Non Invasive Mechanical Ventilation in the treatment of acute and chronic respiratory pathologies
- ♦ Know the updated indications and contraindications for the use of Non Invasive Mechanical Ventilation, as well as the different types of devices and modes of ventilation
- ♦ Acquire skills and competences in the monitoring of the patient with Non Invasive Mechanical Ventilation, including the interpretation of the data obtained and the detection and prevention of complications
- ♦ Investigate the state-of-the-art technologies used in the telemonitoring of patients with Non Invasive Mechanical Ventilation and the ethical and legal aspects related to their use
- ♦ Delve into the main differences in Non Invasive Mechanical Ventilation in Pediatrics
- ♦ Delve into the ethical aspects related to the management of patients requiring NIV





## Specific Objectives

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- ◆ Describe the criteria for performing tracheostomy in patients with prolonged invasive mechanical ventilation
- ◆ Identify the state-of-the-art techniques used in weaning from IMV via tracheostomy
- ◆ Analyze the usefulness of non-invasive respiratory support in the disconnection of orotracheal intubation
- ◆ Delve into the identification of abnormal respiratory patterns, monitoring of respiratory support efficacy, and interpretation of respiratory complications associated with NIV
- ◆ Understand the goals and benefits of respiratory physiotherapy in IRCU
- ◆ Delve into the use of inotropic and vasodilators and the management of hypotension with fluid therapy



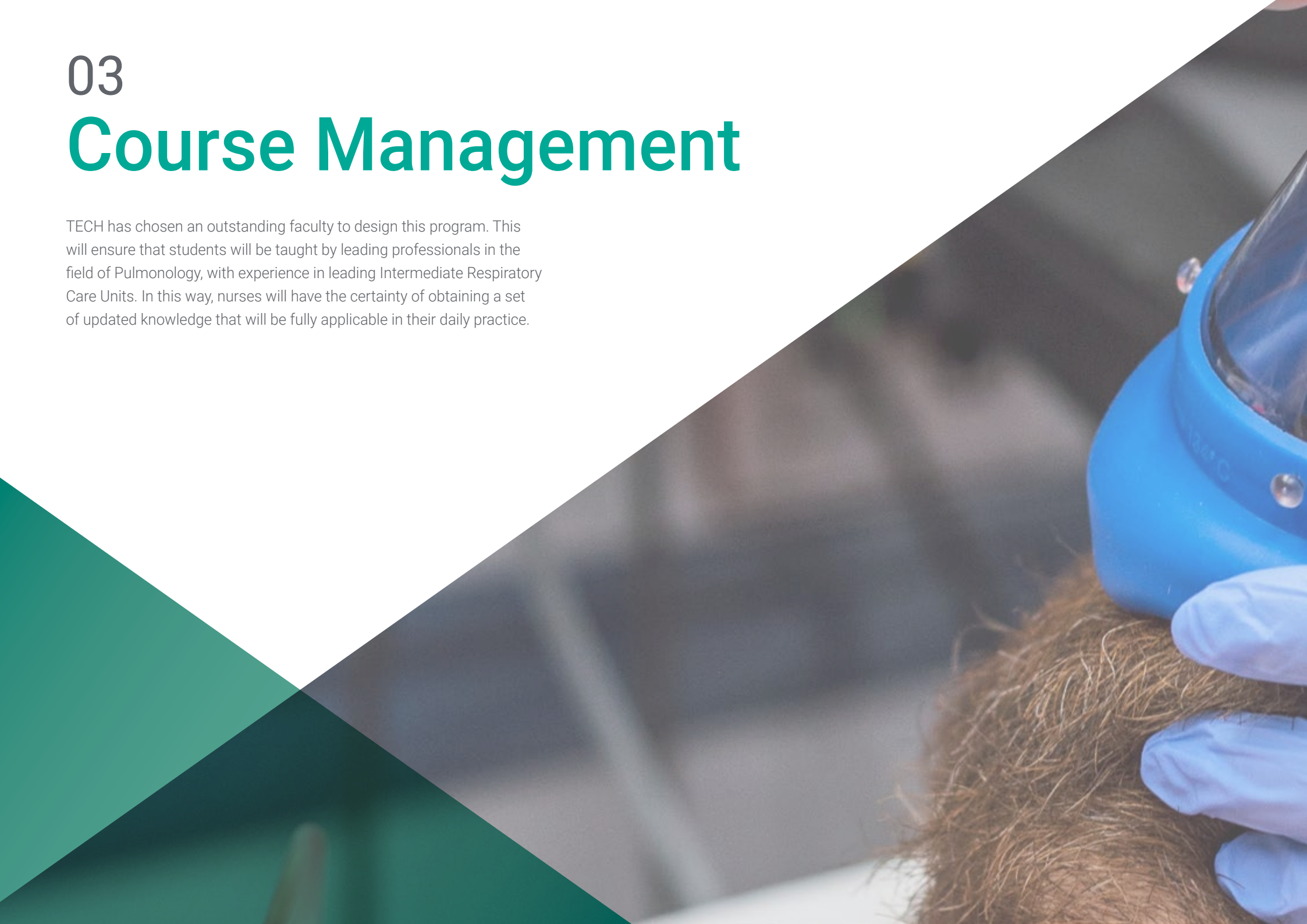
*Position yourself as a state-of-the-art nurse in just 6 weeks of study"*



# 03

# Course Management

TECH has chosen an outstanding faculty to design this program. This will ensure that students will be taught by leading professionals in the field of Pulmonology, with experience in leading Intermediate Respiratory Care Units. In this way, nurses will have the certainty of obtaining a set of updated knowledge that will be fully applicable in their daily practice.





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*Get updated on the management of NIMV and other respiratory support in the IRCU by the best experts in the field"*

## International Guest Director

With a relevant trajectory in the field of Pulmonology and Clinical Research, Dr. Maxime Patout distinguishes himself as an internationally renowned physician and scientist. As such, his involvement and contribution have led him to position himself as Clinical Director in Public Assistance in prestigious hospitals in Paris, standing out for his leadership in the management of Complex Respiratory Diseases. With this, it is worth mentioning his work as Coordinator of the Department of Functional Explorations of Breathing, Exercise and Dyspnea at the famous Hospital de la Pitié-Salpêtrière.

In the field of Clinical Research, Dr. Patout has made valuable contributions in leading areas such as Chronic Obstructive Pulmonary Disease, Lung Cancer and Respiratory Physiology. Accordingly, in his role as a Research Fellow at Guy's and St Thomas' NHS Foundation Trust, he has conducted groundbreaking studies that have expanded and improved the treatment options available to patients.

In this line, his versatility and leadership as a physician give him a vast experience in fields such as Biology, Physiology and Pharmacology of Circulation and Respiration. Therefore, he stands out as a renowned specialist in the Pulmonary and Systemic Diseases unit. In addition, his recognized competence in the Anti-Infectious Chemotherapy unit also places him as an outstanding reference in the field, being a regular advisor to future health professionals.

For all these reasons, his outstanding expertise in the field of Pulmonology has led him to be an active member of prestigious international organizations such as the European Respiratory Society and the French-Language Society of Pneumology, where he continues to contribute to scientific progress. So much so, that he shows an active participation in symposiums that enhance his medical excellence and constant updating in his field.





## Dr. Patout, Maxime

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- Clinical Director in Public Care at the Salpêtrière Hospital, Paris, France
- Clinical Research Fellow at Guy's and St Thomas' NHS Foundation Trust
- Coordinator of the Breathing, Exercise and Dyspnea Functional Examination
- Service at the Pitié-Salpêtrière Hospital
- Doctor of Medicine, University of Rouen
- Master's Degree in Biology, Physiology and Pharmacology of the Circulation and Respiration at the University of Paris
- University Expert in Pulmonary and Systemic Diseases from the University of Lille
- University Expert in Anti-infectious Chemotherapy, University of Rouen
- Medical Specialist in Pulmonology from the University of Rouen
- Member of: European Respiratory Society, French-language Society of Pneumology



*Thanks to TECH, you will be able to learn with the best professionals in the world"*

## Management



### Dr. Landete Rodríguez, Pedro

- ♦ Co-coordinator of the Basic Ventilation Department at La Princesa University Hospital
- ♦ Pulmonologist at La Princesa University Hospital
- ♦ Pulmonologist at Blue Healthcare
- ♦ Researcher in several research groups
- ♦ Professor in undergraduate and postgraduate university studies
- ♦ Author of numerous scientific publications in international journals and participant in several book chapters
- ♦ Speaker at international medical congresses
- ♦ Doctor Cum Laude by the Autonomous University of Madrid

## Professors

### Dr. Ávalos Pérez-Urrutia, Elena

- ♦ Pulmonologist and researcher
- ♦ Specialist in Pneumology at the La Princesa University Hospital
- ♦ Researcher specialized in Respiratory Sleep Disorders and Non-invasive Mechanical Ventilation
- ♦ Teaching collaborator in undergraduate studies in Medicine
- ♦ Master's Degree in Medicine, Complutense University of Madrid



# 04

## Structure and Content

The content of this Postgraduate Certificate brings together the most recent and relevant concepts on Non-Invasive Mechanical Ventilation in a first class IRCU. All educational materials offered in this academic experience will be available in a wide variety of didactic formats, allowing students to choose those that best suit their academic needs. In addition, thanks to its 100% online modality, you will have the flexibility to study 24 hours a day with only a device with a network connection.







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*You will enjoy the most up-to-date academic content on the educational scene, available in innovative multimedia formats to optimize your study”*

## Module 1. Beyond Noninvasive Ventilation in an IRCU Highly Skilled Concepts

- 1.1. Weaning from Invasive Mechanical Ventilation via Tracheostomy in an IRCU
  - 1.1.1. Criteria for the Performance of Tracheostomy in Patients with Prolonged IMV
  - 1.1.2. Preparation of the Patient for Weaning from IMV
  - 1.1.3. Techniques for Weaning IMV through Tracheostomy
  - 1.1.4. Assessment of Tolerance to IMV Weaning via Tracheostomy
  - 1.1.5. Management of Complications during Weaning
- 1.2. Management of Tracheostomy in the IRCU
  - 1.2.1. Selection of the Adequate Tracheostomy Technique for the Patient
  - 1.2.2. Initial Tracheostomy Care in the IRCU
  - 1.2.3. Cannulae Maintenance and Change
  - 1.2.4. Monitoring Complications
  - 1.2.5. Evaluation of the Appropriate Timing of Tracheostomy Withdrawal
  - 1.2.6. Decanulation Protocol
- 1.3. Utility of Noninvasive Respiratory Support in the Disconnection of Orotracheal Intubation
  - 1.3.1. Selection of Patient Candidates for Disconnection
  - 1.3.2. Techniques for Disconnection of Orotracheal Intubation
  - 1.3.3. Evaluation of Tolerance to Noninvasive Respiratory Support During Disconnection
  - 1.3.4. Monitoring and Management of Disconnecting Complications
  - 1.3.5. Evaluation of the Success of Non-Invasive Respiratory Support at Disconnection of Orotracheal Intubation and Patient Follow-up
- 1.4. Management of Secretions and Cough Assistants
  - 1.4.1. Indications
  - 1.4.2. How to Measure Them
  - 1.4.3. Different Devices
  - 1.4.4. Pressure Configuration
  - 1.4.5. How to Use It
- 1.5. NIV and Polygraphy, Indications and Interpretation
  - 1.5.1. Indications of Polygraph in Patients with NIV
  - 1.5.2. Interpretation of Polygraphy Results in NIV Patients
  - 1.5.3. Identification of Abnormal Breathing Patterns on Polygraphy During NIMV
  - 1.5.4. Monitoring the Effectiveness of Respiratory Support During Polygraphy
  - 1.5.5. Interpretation of the Respiratory Complications Associated with NIMV in Polygraphy
- 1.6. Physiotherapy in an IRCU
  - 1.6.1. Objectives and Benefits of Respiratory Physiotherapy in the IRCU
  - 1.6.2. Respiratory Physiotherapy Techniques used in the IRCU
  - 1.6.3. Physiotherapy in the Prevention and Treatment of Respiratory Complications in the IRCU
  - 1.6.4. Evaluation and Monitoring of Patient Progress with Respiratory Physiotherapy in the IRCU
  - 1.6.5. Multidisciplinary Collaboration in the Implementation of Respiratory Physical Therapy in the IRCU
- 1.7. Management of Shock and Other Commonly Used Drugs in IRCU
  - 1.7.1. Types of Shock and their management in IRCUs
  - 1.7.2. Indications and Dosage of Vasopressors in the Management of Shock in IRCU
  - 1.7.3. Use of Inotropics and Vasodilators in the management of Shock in IRCUs
  - 1.7.4. Management of Hypotension in the IRCU with Fluid Therapy
  - 1.7.5. Monitoring of Hemodynamic and Patient Response to Drugs Used in the Management of Shock in the IRCU
- 1.8. Study of Swallowing Alterations
  - 1.8.1. Prolonged Orotracheal Intubation
  - 1.8.2. Tracheostomy
  - 1.8.3. Ineffective Swallowing





- 1.9. Nutritional Study in Patients with Prolonged Admission to the IRCU
  - 1.9.1. Nutritional Assessment in IRCU Patients
  - 1.9.2. Assessing Nutritional Status and Energy Needs
  - 1.9.3. Nutritional Strategies in Patients with Prolonged Admission to the IRCU
  - 1.9.4. Monitoring of Nutritional Support and Necessary Adjustments in IRCU Patients
  - 1.9.5. Prevention and Management of Nutritional Complications in Patients with Prolonged Admission to the IRCU
- 1.10. Unstable Patient Management
  - 1.10.1. Management of Rapid Atrial Fibrillation
  - 1.10.2. Management of Supraventricular Tachycardia
  - 1.10.3. Management of Cardiorespiratory Arrest
  - 1.10.4. Orotracheal Intubation
  - 1.10.5. Sedation in NIV

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*With the Relearning method, you will avoid spending long hours studying and will be able to focus on the most important concepts in an efficient way”*

# 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.

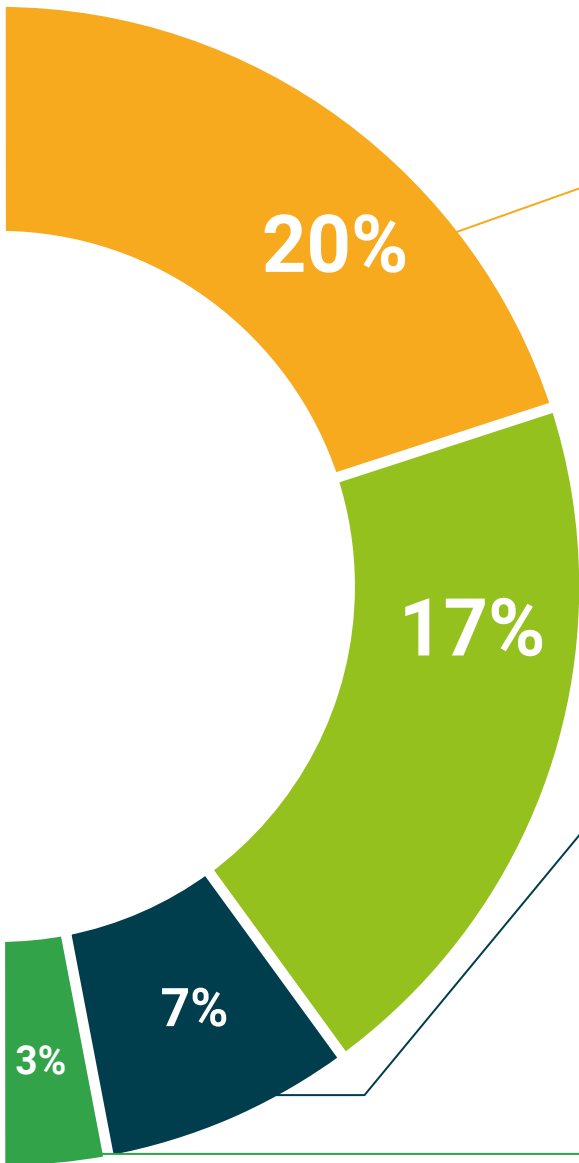
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



### 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 Non-Invasive Ventilation in a Highly Qualified IRCU 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 Non-Invasive Ventilation in a Highly Qualified IRCU 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 Non-Invasive Ventilation in a Highly Qualified IRCU for Nursing**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



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



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- » Modality: online
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