# Postgraduate Diploma

## Intermediate Respiratory Care Units (IRCUs) for Nursing

tech technological university

# Postgraduate Diploma
## Intermediate Respiratory Care Units (IRCUs) for Nursing

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

Website: **www.techtitute.com/pk/nursing/postgraduate-diploma/intermediate-respiratory-care-units-ircus-nursing**

# Index

# 01
# Introduction

IRCUs have experienced a remarkable growth in recent years, as they are indispensable areas for treating people suffering from complex pulmonological diseases. In this line, they have incorporated revolutionary ventilatory devices that contribute to facilitate the breathing of patients and speed up their recovery, which the nurse must know to avoid being left behind with respect to the evolution of this health field. Consequently, TECH has designed this program, through which the student will identify the innovative interfaces used in the IRCU to implement NIV or will investigate the cutting-edge software to undertake the monitoring of the patient. In addition, you will obtain this update following a 100% online methodology and without giving up your daily tasks.

*This Postgraduate Diploma allows you to investigate the innovative software that allows you to establish the follow-up of the patient in the IRCU"*

The Intermediate Respiratory Care Units have demonstrated in the most difficult phase of COVID-19 their excellent capacity to treat delicate respiratory diseases with full solvency. As a result, these medical services have not ceased to grow, which means that the techniques, technologies and care applicable in these areas have developed significantly in recent times in order to preserve the well-being of patients as much as possible, which means that nurses wishing to work in IRCUs must continually keep up to date in order to carry out state-of-the-art healthcare practice.

This is why TECH has created this Postgraduate Diploma, which provides the professional with an updated vision of the current functioning of Intermediate Respiratory Care Units in only 6 months. Through the 450 hours of study, you will delve into the state-of-the-art methods for monitoring the patient subjected to different non-invasive respiratory support techniques. Likewise, students will delve into the care of a patient undergoing a tracheostomy or delve into the sophisticated protocols for the evaluation of the patient before being discharged from the IRCU.

All this, enjoying an innovative methodology 100% online, through which the student will optimize their learning without the need to stick to uncomfortable pre-established study schedules. In the same way, this program is directed and taught by specialists who actively perform their health functions in leading Intermediate Respiratory Care Units. Therefore, the knowledge you will receive will be fully updated.

This **Postgraduate Diploma in Intermediate Respiratory Care Units (IRCUs) 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 Respiratory Care
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- The practical exercises where the self-evaluation process can be carried out to improve the learning process
- 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

*Throughout this academic pathway, you will identify the sophisticated care required by the patient who has undergone a tracheostomy"*

*Develop your healthcare update through simulations of real cases or through very complete explanatory videos.*

*"Do you want to become familiar with the latest technologies in Intermediate Respiratory Care Units from your own home? This program is designed for you!"*

*Learn which are the updated protocols to evaluate the patient before discharge from the IRCU.*

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.

## 02
# Objectives

This Postgraduate Diploma has been designed to provide the nurse with
a completely updated vision of the Intermediate Respiratory Care Units.
Throughout the program, you will learn about the state-of-the-art technologies
used in these areas or the cutting-edge ventilatory support techniques
administered to patients with complex pulmonological difficulties. This
update will also be supported by the following general and specific objectives.

*Deepen your knowledge of the innovative technologies used in the Intermediate Respiratory Care Units by means of this Postgraduate Diploma"*

## General Objectives

- 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

**Module 1. Intermediate Respiratory Care Units (IRCUs)**

- Analyze the role of the IRCU in the care and treatment of critically ill patients
- Have an in-depth knowledge of the structure and design of the IRCU and the mechanisms of coordination and collaboration between the different services
- Identify the types of equipment and technologies available in the IRCU and their advantages and disadvantages
- Detect the latest trends and advances in the technology used in IRCUs
- Delve into the prognostic scales used in NPPV
- Delve into the respiratory, cardiovascular, neurological, gastrointestinal, dermatological and psychological complications in NIV and to know the updated protocols to manage them

**Module 2. Noninvasive Respiratory Support Techniques**

- Understand the principles and mechanics of continuous positive airway pressure, positive airway pressure, pressure support ventilation, volume controlled ventilation and high flow nasal airway goggles (HFFG)
- Identify the indications for the use of each of these ventilatory modalities and know how to adjust the necessary parameters
- Compare the different ventilatory modalities to choose the most appropriate one for each patient
- Know in depth the usefulness of high frequency ventilation and other new ventilatory modes

**Module 3. Beyond Noninvasive Ventilation in an IRCU. Highly Skilled Concepts**

- 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

*Enjoy a first class educational methodology and complete your health update with the best study facilities"*

# Course Management

With the aim of preserving intact the excellent educational quality that characterizes TECH programs, this Postgraduate Diploma has a teaching team made up of specialists who actively develop their functions in cutting-edge Intermediate Respiratory Care Units. Since these professionals are the ones in charge of elaborating the didactic contents of the program, the knowledge acquired by the student will be in tune with the advances that these areas have recently undergone.

"

*Obtain a complete and avant-garde vision of the Intermediate Respiratory Care Units from the hand of specialists who actively work in these areas"*

## Management



### Dr. Landete Rodríguez, Pedro

- Head of the Intermediate Respiratory Care Unit of the Hospital Emergencias Nurse Isabel Zendal
- Co-coordinator of the Basic Ventilation Unit of the Hospital Universitario de La Princesa
- Pulmonologist at the Hospital Universitario de La Princesa
- Pulmonologist at Blue Healthcare
- Researcher in several research groups
- Professor in undergraduate and postgraduate university studies
- Author of scientific numerous publications International journals and participation in book chapters
- Speaker at international medical congresses
- Doctorate *Cum Laude* by the Autonomous University of Madrid

## Professors

### Dr. González, Elizabeth

- Specialist in Pulmonology
- Responsible for Hospitalization, Intermediate Respiratory Care Unit and Mechanical Ventilation Consultation for chronic patients at the Hospital Universitario Clínico San Carlos
- Specialist in Pulmonology at the University Hospital of Getafe
- FEA of Pulmonology at the Clínico San Carlos University Hospital Lecturer in university studies

### Dr. Ferrer Espinos, Santos

- Pulmonologist
- Adjunct of the Pulmonology Service at the Respiratory Care Unit of the Hospital Clínico Universitario de Valencia
- Member of the Emerging Group of Noninvasive Mechanical Ventilation and Respiratory Care of SEPAR
- Master's Degree in Biomedical Research at the University of Valencia

**Dr. Ávalos Pérez-Urrutia, Elena**

- Pulmonologist and researcher
- Specialist in Pulmonology at the Hospital Universitario de La Princesa 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

*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 curriculum of this program has been developed to provide the nurse with the most up-to-date knowledge on the procedures and management of new technologies in Intermediate Respiratory Care Units. Each of its 3 modules has didactic content available in a wide range of highly varied textual and multimedia formats. Thanks to this and by means of a 100% online methodology, you will enjoy an education adapted to your study preferences.

*"TECH's Relearning system allows you to update at your own pace, without being constrained by time limitations for each subject"*

## Module 1. Intermediate Respiratory Care Units (IRCUs)

1.1. Fundamentals and Objectives of the IRCU
- 1.1.1. Evolution Over Time
- 1.1.2. Importance and Benefits
- 1.1.3. Role of IRCUs in Public Health Management

1.2. Characteristics and Organisation of IRCUs
- 1.2.1. Structure and Design
- 1.2.2. Coordination and Collaboration Mechanisms between the Different Services
- 1.2.3. Development of Personalized Care Plans for Each Patient
- 1.2.4. Evaluation and Follow-up of Treatment Results

1.3. Equipment and Technology in IRCUs
- 1.3.1. Types of Equipment and Technology Available in the IRCUs
- 1.3.2. Advantages and Disadvantages of the Different Technologies Available
- 1.3.3. New Trends and Advances in the Technology Used in IRCUs

1.4. Health Care Personnel in IRCUs: Functions and Competencies
- 1.4.1. Professional Profile and Training Requirements of Health Care Professionals Working in IRCUs
- 1.4.2. Competencies and Responsibilities of the Different Members of the Health Care Personnel
- 1.4.3. Teamwork and Coordination among the Different Health Care Professionals in the IRCUs
- 1.4.4. Continuous Training and Professional Updating of Health Care Personnel in the IRCUs

1.5. Indications and Criteria in IRCUs
- 1.5.1. Criteria for Selecting Patients for Admission to the IRCUs
- 1.5.2. Admission Process and Evaluation of the Patients' Health Status

1.6. Monitoring of the Patient in the IRCU
- 1.6.1. Capnography
- 1.6.2. Continuous Pulse Oximetry
- 1.6.3. Respiratory *Softwares*

1.7. VMNI Success and Failure Criteria
- 1.7.1. Prognosis Scales
- 1.7.2. Factors that Affect VMN Success
- 1.7.3. Early Identification of NIV Failure

1.8. Complications and Management of NIV
- 1.8.1. Respiratory Complications
- 1.8.2. Cardiovascular Complications
- 1.8.3. Neurological Complications
- 1.8.4. Gastrointestinal Complications
- 1.8.5. Dermatological Complications
- 1.8.6. Psychological Complications

1.9. Pharmacological Treatments in IRCUs
- 1.9.1. Nutrition and Nutritional Support
- 1.9.2. Sedation and Analgesia in the NIV Patient
- 1.9.3. Others Drugs in IRCUs

1.10. Criteria for Discharge and Follow-up of Patients after their Stay in the IRCU
- 1.10.1. Evaluation of the Patient's Clinical Stability Prior to Discharge from the IRCU
- 1.10.2. Discharge Planning and Patient Follow-up
- 1.10.3. Discharge Criteria for NIV
- 1.10.4. Outpatient Follow-up after Discharge from the IRCU
- 1.10.5. Assessment of Quality of Life after Discharge from the IRCU

## Module 2. Noninvasive Respiratory Support Techniques

2.1. Evaluation of the Level of Ventilatory Support Needed
- 2.1.1. Evaluation of the Clinical Indications
- 2.1.2. Interpretation of Arterial Blood Gas Analysis
- 2.1.3. Evaluation of Respiratory Mechanics
- 2.1.4. Determination of the Level of Ventilatory Support Needed
- 2.1.5. Change of Ventilatory Modality

2.2. Continuous Positive Airway Pressure (CPAP)
- 2.2.1. Principles and Mechanicsof CPAP
- 2.2.2. Indications for the Use of CPAP
- 2.2.3. Adjustment of CPAP Parameters
- 2.2.4. Monitoring and Management of CPAP Complications
- 2.2.5. Comparison of CPAP with Other Ventilatory Modalities

## Module 3. Beyond Noninvasive Ventilation in an IRCU. Highly Skilled Concepts

3.1.    Weaning from Invasive Mechanical Ventilation via Tracheostomy in an IRCU

    3.1.1.    Criteria for the Performance of Tracheostomy in Patients with Prolonged IMV

    3.1.2.    Preparation of the Patient for Weaning from IMV

    3.1.3.    Techniques for Weaning IMV through Tracheostomy

    3.1.4.    Assessment of Tolerance to IMV Weaning via Tracheostomy

    3.1.5.    Management of Complications during Weaning

3.2.    Management of Tracheostomy in the IRCU

    3.2.1.    Selection of the Adequate Tracheostomy Technique for the Patient

    3.2.2.    Initial Tracheostomy Care in the IRCU

    3.2.3.    Cannulae Maintenance and Change

    3.2.4.    Monitoring Complications

    3.2.5.    Evaluation of the Appropriate Timing of Tracheostomy Withdrawal

    3.2.6.    Decanulation Protocol

3.3.    Utility of Noninvasive Respiratory Support in the Disconnection of Orotracheal Intubation

    3.3.1.    Selection of Patient Candidates for Disconnection

    3.3.2.    Techniques for Disconnection of Orotracheal Intubation

    3.3.3.    Evaluation of Tolerance to Noninvasive Respiratory Support During Disconnection

    3.3.4.    Monitoring and Management of Disconnecting Complications

    3.3.5.    Evaluation of the Success of Noninvasive Respiratory Support at Disconnection of Orotracheal Intubation and Patient Follow-up

3.4.    Management of Secretions and Cough Assistants

    3.4.1.    Indications

    3.4.2.    How to Measure Them

    3.4.3.    Different Devices

    3.4.4.    Pressure Configuration

    3.4.5.    How to Use It

3.5.    NIV and Polygraphy, Indications and Interpretation

    3.5.1.    Indications of Polygraph in Patients with NIV

    3.5.2.    Interpretation of Polygraphy Results in NIV Patients

    3.5.3.    Identification of Abnormal Breathing Patterns on Polygraphy During NIV

    3.5.4.    Monitoring the Effectiveness of Respiratory Support During Polygraphy

    3.5.5.    Interpretation of the Respiratory Complications Associated with NIV in Polygraphy

## 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.*
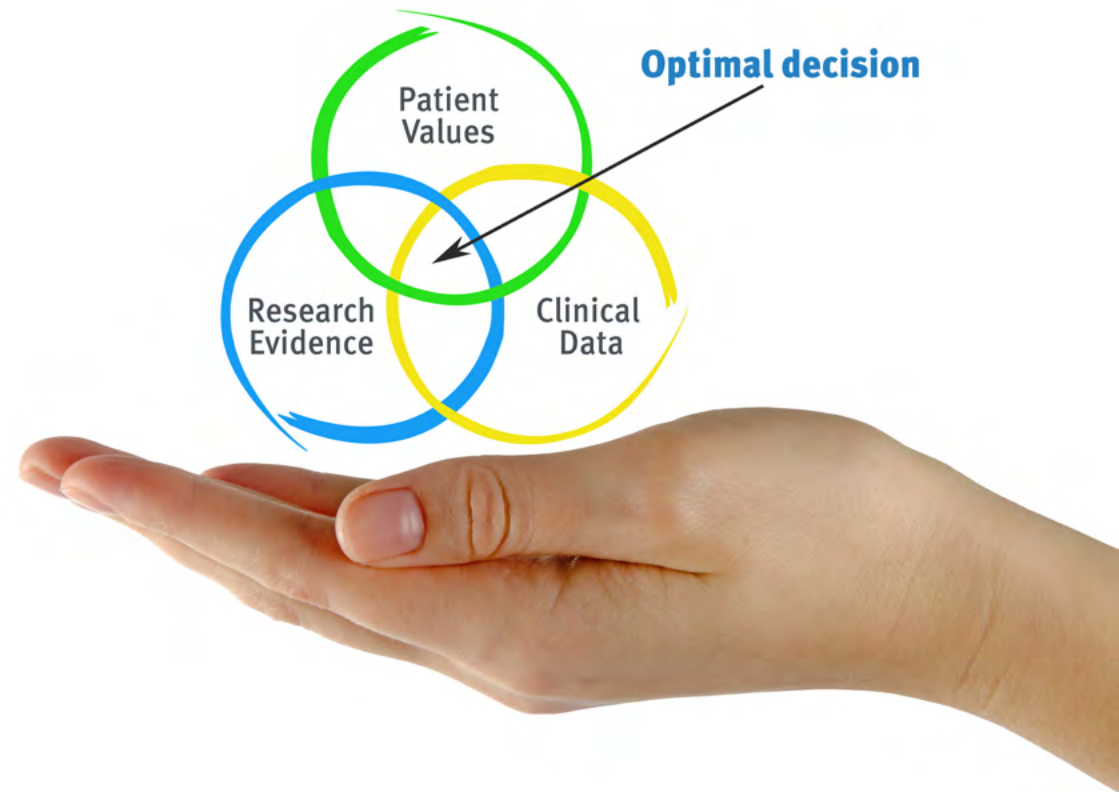


According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that 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

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.*

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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.

**20%**

**15%**

**15%**

**3%**

**20%**

**17%**

**7%**

**3%**
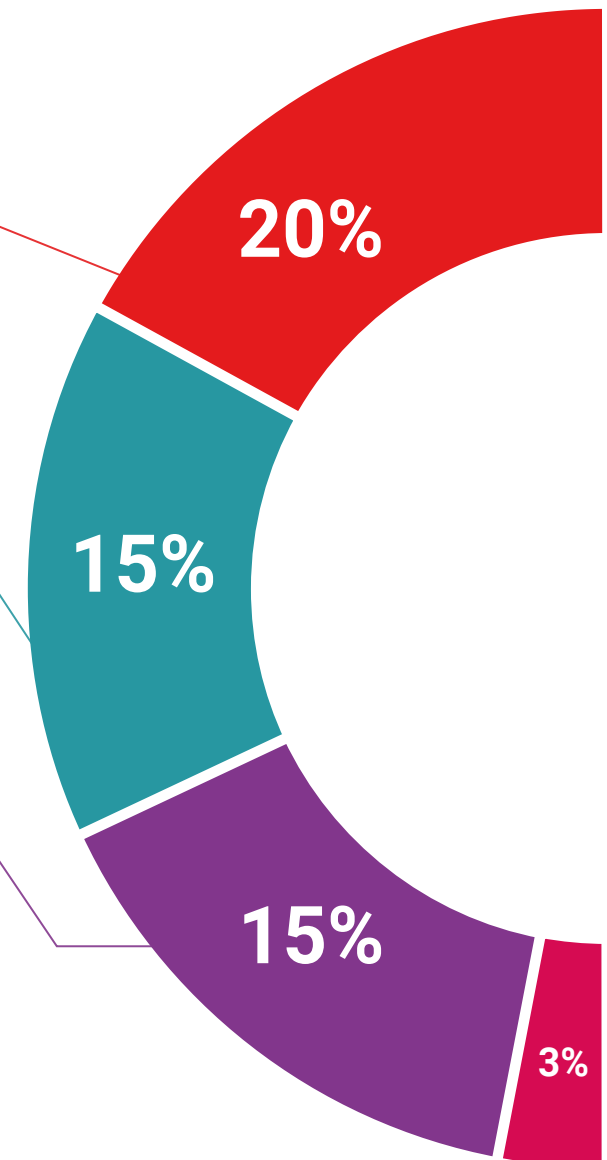
### Expert-Led Case Studies and Case Analysis

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.
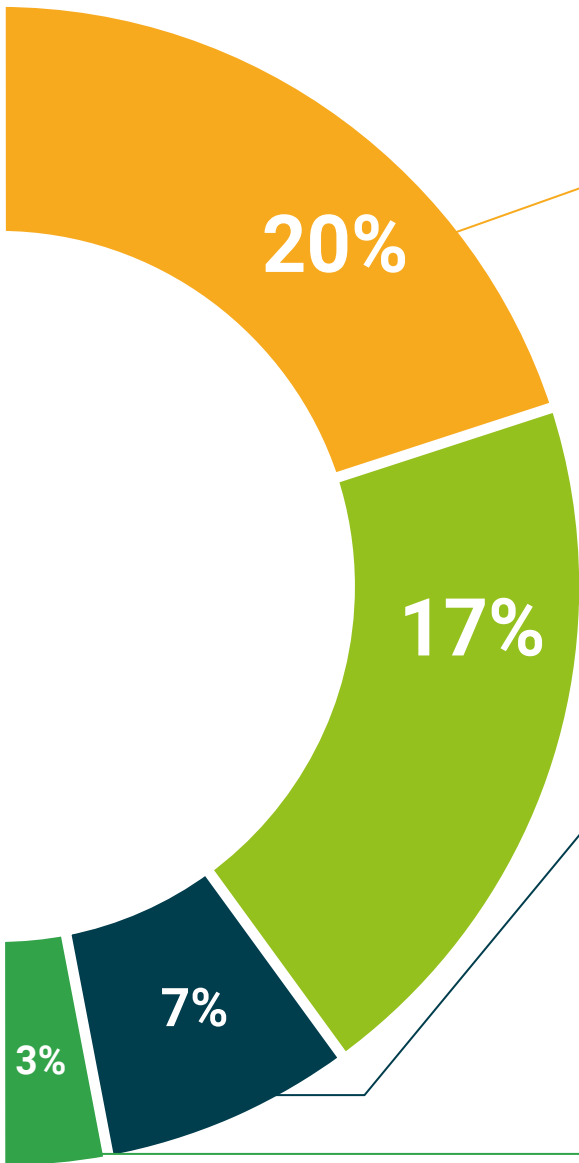
### Classes

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.

# Certificate

The Postgraduate Diploma in Intermediate Respiratory Care Units (IRCUs) 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.

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

This **Postgraduate Diploma in Intermediate Respiratory Care Units (IRCUs) for Nursing** contains the most complete and up-to-date scientific on the market.

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

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

Title: **Postgraduate Diploma in Intermediate Respiratory Care Units (IRCUs) for Nursing**

Official Nº of Hours: **450 h.**

**tech** technological university

Awards the following
## CERTIFICATE
to

Mr./Ms. _____, with identification number _____.
For having passed and accredited the following program

**POSTGRADUATE DIPLOMA**
in

Intermediate Respiratory Care Units (IRCUs) for Nursing

This is a qualification awarded by this University, equivalent to 450 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
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 certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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