

# Postgraduate Certificate Respiratory Physiology and Pulmonary Function Assessment in Nursing





## Postgraduate Certificate

### Respiratory Physiology and Pulmonary Function Assessment in Nursing

- » Modality: online
- » Duration: 2 months
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/pk/nursing/postgraduate-certificate/respiratory-physiology-pulmonary-function-assessment-nursing](http://www.techtute.com/pk/nursing/postgraduate-certificate/respiratory-physiology-pulmonary-function-assessment-nursing)

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# 01

# Introduction

The objective of this program in Respiratory Physiology and Pulmonary Function Assessment in Nursing is to demonstrate advancements in knowledge, so that professionals can acquire new techniques for use in the assessment of pulmonary function. The contribution of information for new nursing staff will, in turn, help contribute to future research developments.



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*The Postgraduate Certificate in Respiratory Physiology and Pulmonary Function Assessment in Nursing contains the most complete and up-to-date scientific program on the market”*

The Postgraduate Certificate is structured in such a way that will allow students to look in depth at new information provided by respiratory physiology and pulmonary function assessments, and thereby learn, a priori, the most efficient research techniques and practice models in pulmonology.

The program offers high-quality multimedia content, taught through a specific methodology to provide techniques, developments and analytical skills that will serve to make a correct assessment of pulmonary function. The program includes analysis of clinical cases elaborated by experts in respiratory therapies, explanatory videos for the different therapies, photos of the materials used for the different techniques, as well as the most recent developments and innovations.

As this is a program provided entirely online, students can organize their own time and adapt the pace of learning to their own schedule. The contents of this Postgraduate Certificate can be accessed from any computer or mobile device and be consulted at any time, as long as students have an internet connection or have previously downloaded them onto their computer.

The **Postgraduate Certificate in Respiratory Physiology and Pulmonary Function Assessment in Nursing** contains the most complete and up-to-date scientific program on the market. Its most important features include:

- ♦ Development of clinical cases presented by experts in related, multidisciplinary areas
- ♦ Graphic, schematic, and practical contents created in order to provide scientific and practical information on those disciplines that are essential for professional practice
- ♦ New developments in Respiratory Physiology and Pulmonary Function Assessment in Nursing
- ♦ An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course
- ♦ Special emphasis on evidence-based nursing and research methodologies for Respiratory Physiology and Pulmonary Function Assessment in Nursing
- ♦ All of this will be complemented by 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



*Expand your abilities in the approach to Respiratory Physiology and Pulmonary Function Assessment in Nursing through this program"*





*This program is the best investment you can make in selecting a refresher program, for two reasons: in addition to bringing your knowledge up to date in Respiratory Physiology and Pulmonary Function Assessment in Nursing, you will earn a Postgraduate Certificate from TECH Technological University"*

Its teaching staff includes health professionals in the field of Respiratory Physiology and Pulmonary Function Assessment in Nursing, who bring the experience of their work to this program, in addition to recognized specialists belonging to leading scientific societies.

Its multimedia content, developed with the latest educational technology, will provide the professional with situational and contextual learning, i.e., a simulated environment that will provide immersive training for real situations.

This program is designed around Problem-Based Learning, whereby the physician must try to solve the different professional practice situations that arise throughout the program. This will be done with the help of an innovative interactive video system developed by renowned experts in the field of nephrology with extensive teaching experience.

*Increase your decision-making confidence by bringing your knowledge up to date through this Postgraduate Certificate in Respiratory Physiology and Pulmonary Function Assessment in Nursing.*

*Don't miss out on the opportunity to bring your knowledge up to date in Respiratory Physiology and Pulmonary Function Assessment in Nursing, and improve your patient care.*



# 02 Objectives

The main objective of the program is to develop theoretical and practical learning, so that nurses can achieve practical and rigorous mastery of Respiratory Physiology and Pulmonary Function Assessment in Nursing through specialized studies.





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*This refresher program will generate confidence when practising nursing, which will help you grow both personally and professionally”*



## General Objectives

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- ♦ Acquire up-to-date knowledge of existing respiratory therapies in which nursing staff is involved
- ♦ Promote strategies to provide individualized quality care for respiratory patients and to serve as a basis for achieving excellence in care
- ♦ Provide technical skills in respiratory therapies through audiovisual means and the presentation of quality clinical cases
- ♦ Encourage professional enhancement through specialized continued education and research



*Make the most of this opportunity and get up to date on the latest developments in Respiratory Physiology and Pulmonary Function Assessment in Nursing"*





## Specific Objectives

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- ♦ Acquire up-to-date nursing knowledge of respiratory system anatomy
- ♦ Know the physiology of pulmonary ventilation
- ♦ Understand how gas diffusion takes place
- ♦ Understand how oxygen and carbon dioxide are transported through the blood
- ♦ Understand how respiration regulation is carried out
- ♦ Analyze the different characteristics of normal breathing to be able to recognize breathing disorders
- ♦ Become familiar with the different tests used to analyze pulmonary function, as well as how to interpret results
- ♦ Update knowledge of different methods used to assess respiratory health in patients, through nursing procedures

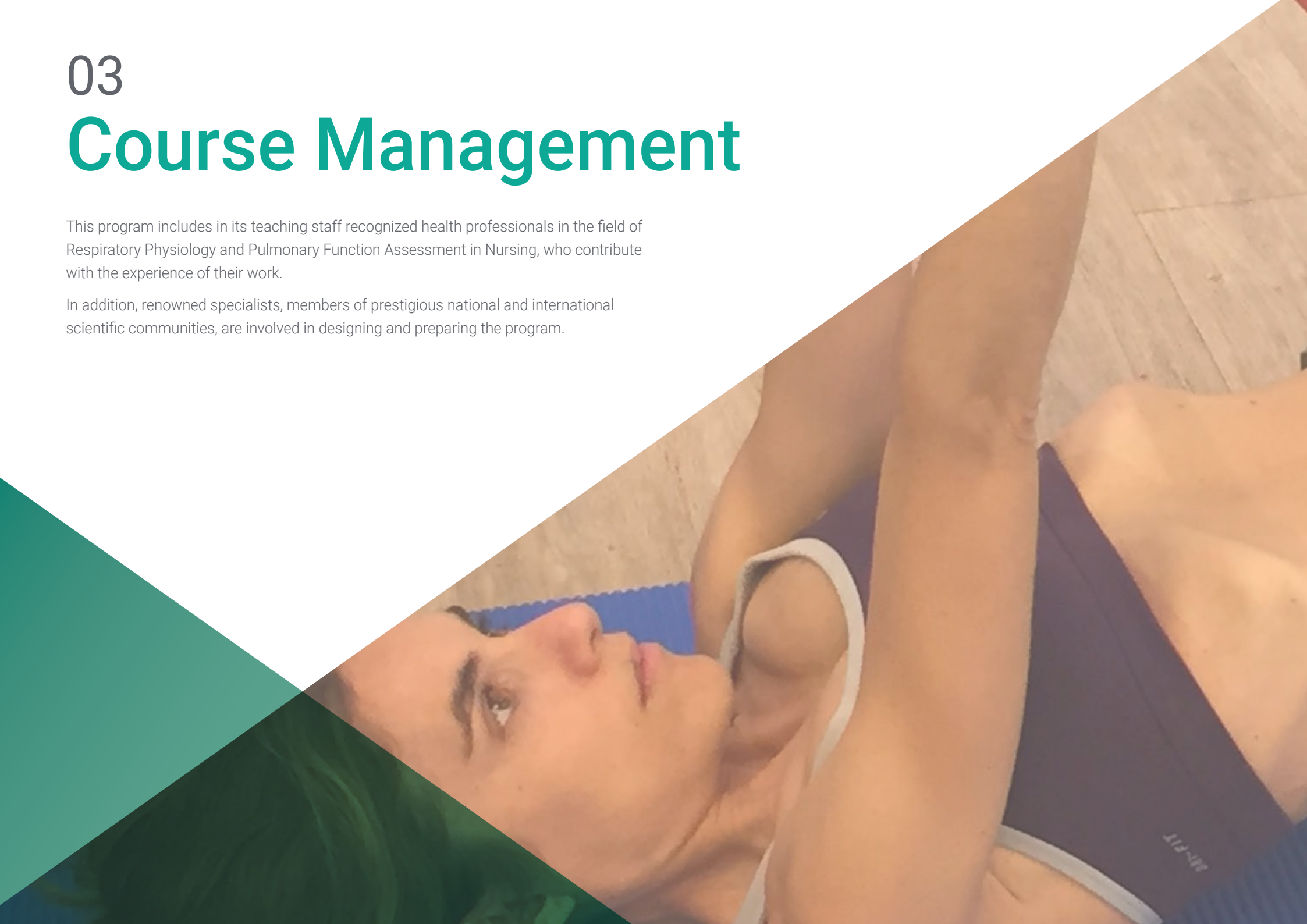


03

# Course Management

This program includes in its teaching staff recognized health professionals in the field of Respiratory Physiology and Pulmonary Function Assessment in Nursing, who contribute with the experience of their work.

In addition, renowned specialists, members of prestigious national and international scientific communities, are involved in designing and preparing the program.





*Learn about the latest advances in procedures for  
Respiratory Physiology and Pulmonary Function  
Assessment in for Nursing from leading professionals"*

## Guest Director



### Dr. Amado Canillas, Javier

- ♦ Nursing Supervisor at 12 de Octubre H. Hospitalization of Pneumology Endocrinology and Rheumatology
- ♦ Associate Professor of Health Sciences at the Complutense University of Madrid: Associate Clinician of Medical-Surgical Nursing
- ♦ Evaluator of teaching activities for the Technical Secretariat of the Directorate General of Planning, Research and Training of the Community of Madrid
- ♦ PhD Outstanding Cum Laude, Complutense University of Madrid, 2014
- ♦ Degree in Nursing and Masters Degree in Research in Care from the Complutense University of Madrid
- ♦ Bachelor's Degree in Computer Science IT, Complutense University
- ♦ Currently studying a PhD in Audiovisual Communication at the Complutense University.
- ♦ More than 10,000 accredited teaching hours as a professor of specialized care for different organizations, in particular the Nursing College of Madrid and FUDEN

## Co-Direction



### Ms. Santamarina López, Ana

- ♦ Nurse with extensive experience in home respiratory therapy
- ♦ Graduate in Nurses Medicine from the University of Leon, Spain
- ♦ Postgraduate Diploma in Digital Teaching in Nursing, CEU Cardenal Herrera University
- ♦ Master's Degree in Research in Dental Sciences, (University of León)



## Professors

### Ms. Castaño Menéndez, Alba

- ♦ UCRI (Intermediate Respiratory Care Unit) at 12 Octubre University Hospital
- ♦ Bachelor's Degree in Nursing, Complutense University, Madrid
- ♦ Postgraduate Diploma in Respiratory Patient Care of FUDEN Graduate School of Postgraduate Studies
- ♦ Nurse in home respiratory therapies, MMNI, MMI Completing TRD at the 12 de Octubre University Hospital
- ♦ Emergency Department and Internal Medicine at San Carlos Clinical University Hospital

### Ms. Almeida Calderero, Cristina

- ♦ Pneumology, Endocrine and Rheumatology Service, 12 de Octubre University Hospital, Madrid
- ♦ University Diploma in Nursing University of Salamanca
- ♦ University Diploma in Occupational Therapy University of Salamanca
- ♦ Collaborator of the Faculty of Nursing, Physiotherapy and Podiatry at the Complutense University of Madrid
- ♦ Pediatric Surgical Unit Gregorio Marañón Maternity Hospital, Madrid
- ♦ Intensive Care Unit. Clinical University Hospital Salamanca
- ♦ Surgical Resuscitation Unit Clinical University Hospital Salamanca
- ♦ Nurse in Primary Care in Health Center in Salamanca

### Ms. De Prado de Cima, Silvia

- ♦ Graduate in Physiotherapy from the University of Valladolid, Spain
- ♦ Master's Degree in Thoracic Physiotherapy by Gimbernat and Tomás Cerdà University (Campus Sant Cugat)
- ♦ Physiotherapist in home respiratory therapies

### Ms. García Vañes, Cristina

- ♦ Graduate in Nurses Medicine from the University of Cantabria, Spain
- ♦ Nurse in home respiratory therapies

### Ms. Rojo Rojo, Angélica

- ♦ Graduate in Nurses Medicine from the University of Valladolid, Spain
- ♦ Postgraduate Diploma in Nursing in the Integral Care of Respiratory Patients
- ♦ Nurse in home respiratory therapies

### Mr. Amado Durán, Alfredo

- ♦ Diploma in Physiotherapy from European University
- ♦ Móstoles Hospital, Madrid Clinical training: cervical spine treatment
- ♦ Traditional Thai Massage Training at Wat Po School of Traditional Medicine Bangkok, Thailand
- ♦ Degree in Nursing from European University
- ♦ Master's Degree in Osteopathy, Belgian College of Osteopathy, FBO First, Structural
- ♦ Consultations in Chembenyumba, Mayotte
- ♦ Consultations en Sainte Suzanne Reunión Island
- ♦ Consultations at the Frejus-Saint-Raphael Hospital Frejus, France

### Ms. García Pérez, Silvia

- ♦ Pneumology, Endocrine and Rheumatology Service, 12 de Octubre University Hospital, Madrid
- ♦ Senior Technician in Dietetics and Nutrition I.E.S San Roque Madrid
- ♦ Certificate in Nursing from the Complutense University, Madrid
- ♦ Nuclear Medicine Service at the 12 de Octubre University Hospital, Madrid
- ♦ Neurosurgery Department, 12 de Octubre University Hospital, Madrid
- ♦ UCI and Pediatrics Service, 12 de Octubre University Hospital, Madrid
- ♦ Member of teaching staff at the Faculty of Nursing, Physiotherapy and Podiatry, Complutense University, Madrid, for clinical practice sessions of the Nursing degree

# 04

## Structure and Content

The syllabus has been designed by a team of professionals who recognize the implications of specialization in nursing daily practice and are aware of the relevance of current training to treat the pediatric patients with learning difficulties or mental disorders, and are committed to quality teaching using new educational technologies.





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*The Postgraduate Certificate in Respiratory Physiology and Pulmonary Function Assessment in Nursing contains the most complete and up-to-date scientific program on the market”*

## Module 1. Anatomo-Physiology of the Respiratory System and Assessment of Pulmonary Function

- 1.1. Respiratory Apparatus Anatomy
  - 1.1.1. Upper Airway Anatomy
  - 1.1.2. Lower Airway Anatomy
  - 1.1.3. Lungs and Respiratory Unit
  - 1.1.4. Accessory Structures: Pleura and Respiratory Musculature
  - 1.1.5. Mediastinum
  - 1.1.6. Pulmonary Perfusion
- 1.2. Pulmonary Ventilation
  - 1.2.1. Respiratory Mechanism
  - 1.2.2. Airway Resistance
  - 1.2.3. Breathing Work
  - 1.2.4. Lung Volume and Capacity
- 1.3. Gas Diffusion
  - 1.3.1. Partial Pressure
  - 1.3.2. Diffusion Rate
  - 1.3.3. Relationship between Ventilation and Perfusion
- 1.4. Gas Transportation
  - 1.4.1. Blood Oxygen Transport
  - 1.4.2. Hemoglobin Dissociation Curve
  - 1.4.3. Blood Coal Transport
- 1.5. Breathing Regulation
  - 1.5.1. Respiratory Control Centers
  - 1.5.2. Chemical Breathing Control
  - 1.5.3. Non-Chemical Breathing Control
- 1.6. Breathing Characteristics
  - 1.6.1. Frequency (F)
  - 1.6.2. Rhythm
  - 1.6.3. Depth
  - 1.6.4. Adventitious Sounds
  - 1.6.5. Breathing Patterns
- 1.7. Functional Respiratory Examination Pulmonary Function Tests
  - 1.7.1. Spirometry Interpretation of Results
  - 1.7.2. Bronchial Provocation Tests
  - 1.7.3. Static Pulmonary Volumes Body Plethysmography
  - 1.7.4. Pulmonary Resistance Study
  - 1.7.5. Pulmonary Elasticity and Distensibility *Compliance*
  - 1.7.6. Study of Respiratory Muscle Function
  - 1.7.7. Pulmonary Diffusion Tests DLCO
  - 1.7.8. Gas Exchange: Arterial Gasometry Acid-- Base Balance.
  - 1.7.9. Stress Tests. 6-minute Walk and Shuttle Test
  - 1.7.10. Pulse Oximetry
  - 1.7.11. Bronchoscopy
  - 1.7.12. X-Ray Tests
- 1.8. Respiratory Patient Assessment
  - 1.8.1. Quality of Life of the Respiratory Patient: Saint George Questionnaire
  - 1.8.2. Nursing Assessment of the Respiratory Patient by Functional Patterns





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*A unique, key, and decisive educational experience that will boost your professional development”*

06

# 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.





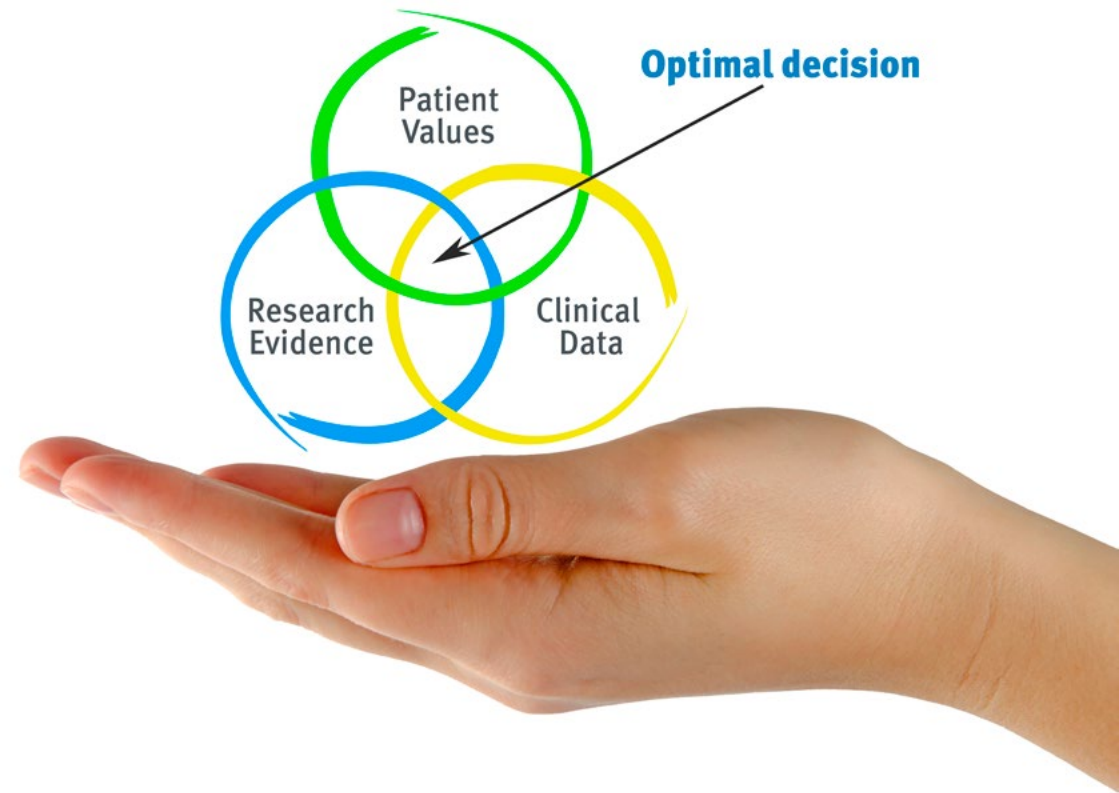
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*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## 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.

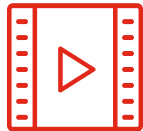
*Relearning will allow you to learn with less effort  
and better performance, involving you more in  
your specialization, developing a critical mindset,  
defending arguments, and contrasting opinions: a  
direct equation to success.*

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

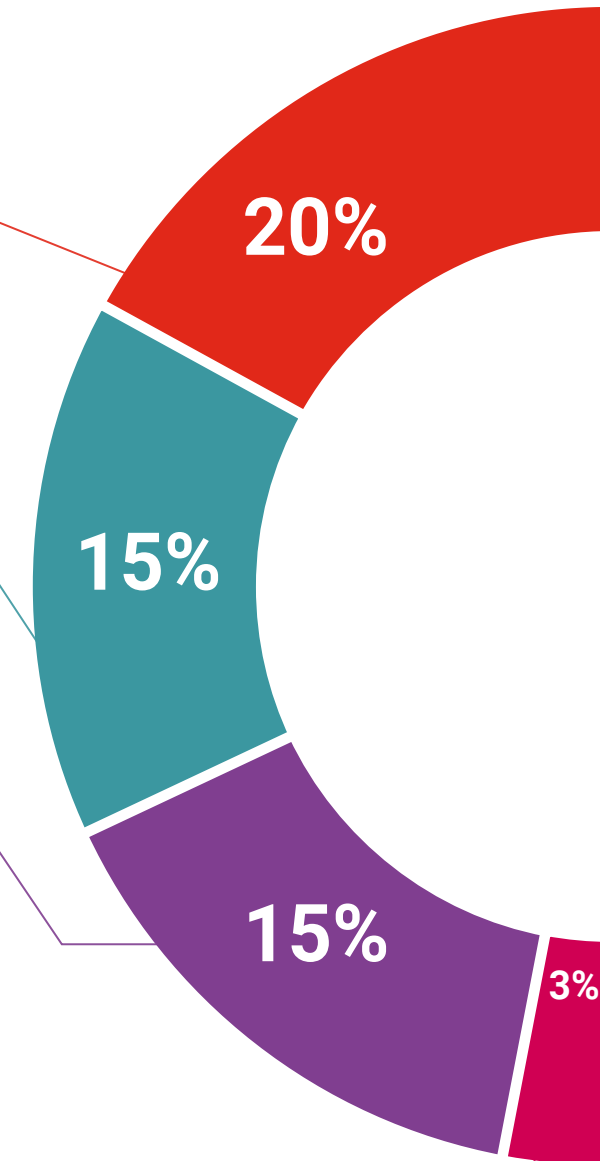
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

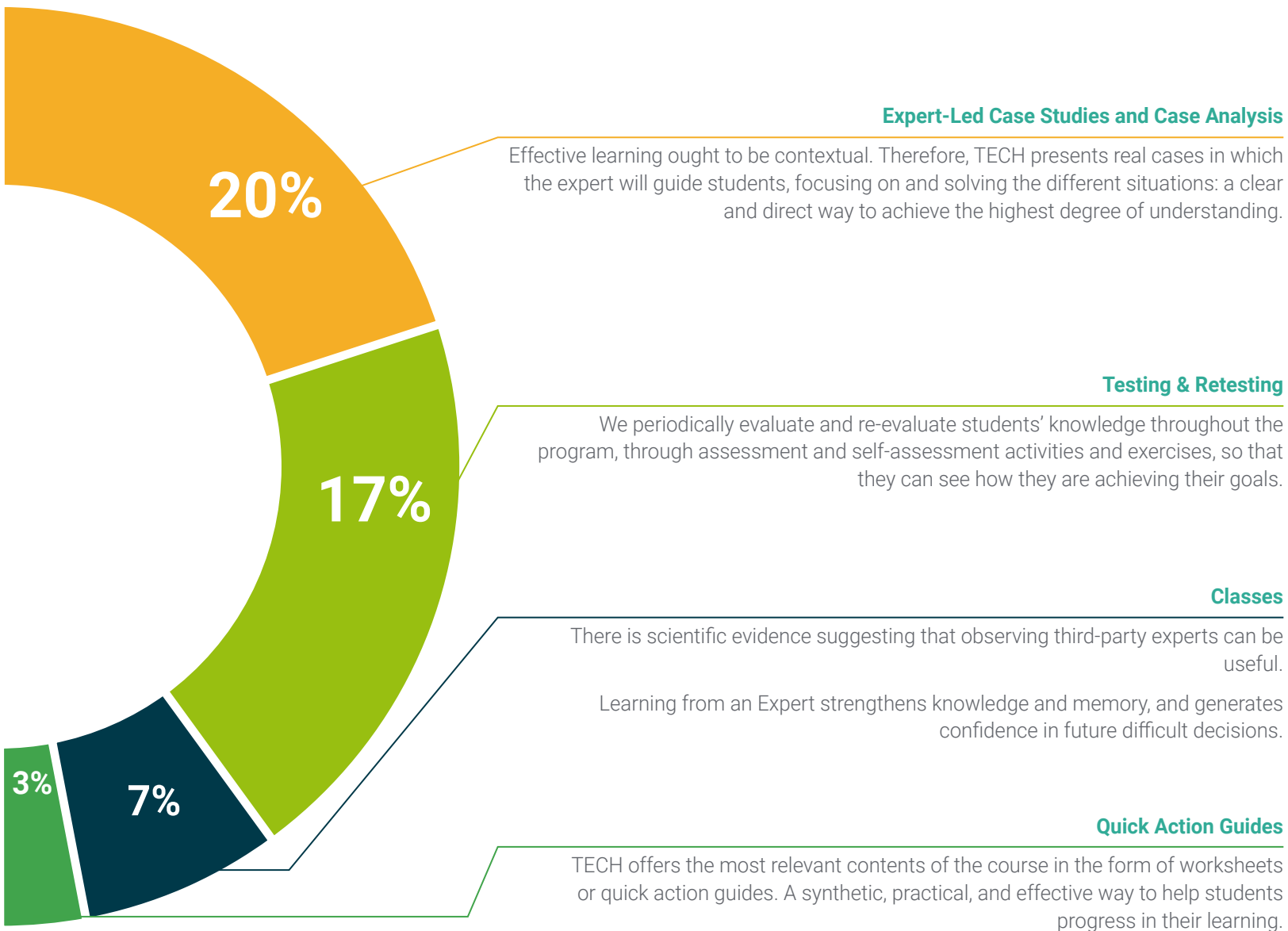


#### Additional Reading

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.







# 06 Certificate

The Postgraduate Certificate in Respiratory Physiology and Pulmonary Function Assessment in 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 Certificate in Respiratory Physiology and Pulmonary Function Assessment in 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 certificate 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 Respiratory Physiology and Pulmonary Function Assessment in Nursing**

Official N° of Hours: **125 h.**



\*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.



## Postgraduate Certificate

Respiratory Physiology  
and Pulmonary Function  
Assessment in Nursing

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# Postgraduate Certificate

## Respiratory Physiology and Pulmonary Function Assessment in Nursing

