

Postgraduate Certificate

Non-Invasive Respiratory Support Techniques for Nursing





Postgraduate Certificate Non-Invasive Respiratory Support Techniques 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-respiratory-support-techniques-nursing

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01 Introduction

Nowadays, the use of Non-Invasive Mechanical Ventilation is becoming more and more frequent to treat respiratory diseases in a more comfortable way for the patient. Therefore, the techniques used and the methods of adjusting them are constantly improving, with the aim of increasing the well-being of the hospitalized individual. For this reason, it is essential that nurses keep abreast of the latest scientific evidence on CPAP management, BiPAP or volume-controlled ventilation to help preserve the quality of life of patients. In this situation, TECH has developed this 100% online program, which offers an in-depth delve into these fields without the need to leave your home.



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Thanks to TECH, you will update your knowledge on the adjustment of ventilatory parameters in CPAP or BiPAP”

Recent scientific research continuously supports the application of Non-Invasive Mechanical Ventilation in various clinical settings. As a result, its use has gained popularity in the medical field in recent times. As a result, the techniques used for its implementation are constantly evolving, as well as the strategies for adjusting ventilatory parameters or the monitoring methods for each of them.

Therefore, nurses are obliged to know the latest advances in Non-Invasive Respiratory Support Techniques for Nursing in order to provide state-of-the-art care to their patients. Accordingly, TECH has designed this program, which enables the learner to explore cutting-edge strategies for pressure support ventilation or high-flow nasal cannula. It will also delve into procedures for monitoring and managing CPAP and BiPAP complications.

Because the program is delivered exclusively in a 100% online format, specialists will enjoy the flexibility to adapt their learning process to their daily commitments and schedules without time constraints.

In addition, the pedagogical approach of the program incorporates the application of *Relearning*, which ensures that students have a solid and lasting understanding of the fundamental concepts.

This **Postgraduate Certificate in Non-Invasive Respiratory Support Techniques for Nursing** contains the most complete and up-to-date scientific 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



Identify the state-of-the-art protocols for monitoring and managing the complications of the different types of non-invasive respiratory support"

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This program offers you the best didactic tools so that, through 6 weeks of intensive study, you can achieve a dynamic and decisive professional update"

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.

TECH's Relearning method will allow you to optimize your update, exploring the key aspects of the syllabus at your own pace of study.

Get to know the advanced techniques for humidification and temperature settings in NIMV.



02 Objectives

The purpose of this program is to ensure the professional updating of the nurse in relation to Non-Invasive Respiratory Support Techniques. Through this educational experience, the student will delve into the state-of-the-art recommendations and limitations of each one of them, as well as the protocols to address the complications derived from them according to the most recent scientific evidence.





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Delve into the most updated aspects of Non-Invasive Respiratory Support Techniques for Nursing in only 150 hours”



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

- ◆ 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

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TECH provides you with the most innovative pedagogical tools, so that you can successfully achieve your objectives”

03

Course Management

TECH has chosen an outstanding teaching team for this program. This will ensure that students receive classes taught by outstanding professionals with extensive experience in the field of Pulmonology and Non-Invasive Mechanical Ventilation. In this way, nurses will have the certainty of obtaining a renowned program that will provide them with the most innovative knowledge in the sector.





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This teaching staff is made up of specialists with extensive experience in the field of Pulmonology, with whom you will be able to update your knowledge in this branch of NIMV”

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

- 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

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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. 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



04

Structure and Content

The syllabus of this academic program has been developed with the purpose of providing the nurse with the most updated knowledge in the field of Non-Invasive Mechanical Ventilation and the latest respiratory support techniques available. The educational resources of this innovative Postgraduate Certificate will be presented in various formats, such as simulation of real cases or interactive summaries. In addition, being 100% online, the student will be able to update their knowledge at the time and place of their choice.





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The 100% online methodology of this Postgraduate Certificate allows you to study without leaving your home"

Module 1. Noninvasive Respiratory Support Techniques

- 1.1. Evaluation of the Level of Ventilatory Support Needed
 - 1.1.1. Evaluation of the Clinical Indications
 - 1.1.2. Interpretation of Arterial Blood Gas Analysis
 - 1.1.3. Evaluation of Respiratory Mechanics
 - 1.1.4. Determination of the Level of Ventilatory Support Needed
 - 1.1.5. Change of Ventilatory Modality
- 1.2. Continuous Positive Airway Pressure (CPAP)
 - 1.2.1. Principles and Mechanics of CPAP
 - 1.2.2. Indications for the Use of CPAP
 - 1.2.3. Adjustment of CPAP Parameters
 - 1.2.4. Monitoring and Management of CPAP Complications
 - 1.2.5. Comparison of CPAP with Other Ventilatory Modalities
- 1.3. Positive Airway Pressure (BiPAP)
 - 1.3.1. Principles and Mechanics of BiPAP
 - 1.3.2. Indications for the Use of BiPAP
 - 1.3.3. Adjustment of BiPAP Parameters
 - 1.3.4. Monitoring and Management of BiPAP Complications
 - 1.3.5. Comparison of BiPAP with Other Ventilatory Modalities
- 1.4. Pressure Supporting Ventilation
 - 1.4.1. Conventional (PSV)
 - 1.4.2. Proportional (PPSV)
 - 1.4.3. Adaptive (ASV)
 - 1.4.4. Intelligent Adaptive (iVAPS)
- 1.5. Volume-Controlled Ventilation
 - 1.5.1. Principles and Mechanics of Volume Controlled NIV
 - 1.5.2. Indications for the Use of NIV by Volume
 - 1.5.3. How to Adjust the Volume Parameters
 - 1.5.4. Monitoring and Management of Complications in Volume Mode
 - 1.5.5. Comparison of Volume Mode with Other Ventilatory Modalities





- 1.6. High-flow Nasal Cannula (HFNC)
 - 1.6.1. Principles and Mechanics of HFNCs
 - 1.6.2. Indications for the Use of HFNCs
 - 1.6.3. Adjustment of HFNC Parameters
 - 1.6.4. Monitoring and Management of HFNC Complications
 - 1.6.5. Comparison of HFNC with Other Ventilatory Modalities
- 1.7. Combined Ventilation (Positive Pressure (CPAP/BiPAP) + HFNC)
 - 1.7.1. Principles and Mechanics of Combination Therapy
 - 1.7.2. Indications for the Use of Combined Therapies
 - 1.7.3. How to Initiate Combination Therapy, at the Same Time or in a Staggered Manner
 - 1.7.4. Adjustment of Combined Therapies Parameters
 - 1.7.5. Monitoring and Management of Combined Therapies Complications
 - 1.7.6. Comparison of Combined Therapies with Other Ventilatory Modalities
- 1.8. High Frequency Ventilation
 - 1.8.1. Indications for the Use of NIV with High Frequency
 - 1.8.2. Parameter Adjustment
 - 1.8.3. Usefulness in the Acute Patient
 - 1.8.4. Usefulness in the Chronic Patient
 - 1.8.5. Monitoring and Management of Complications
 - 1.8.6. Comparison with Other Ventilatory Modalities
- 1.9. Other Ventilatory Modes
 - 1.9.1. Pressure Support Ventilation with Mandatory Flow Control (MFC)
 - 1.9.2. High Velocity Ventilation with Nasal Cannula
 - 1.9.3. Other Innovative Ventilatory Modes
- 1.10. Humidification and Temperature Adjustment in NIV
 - 1.10.1. Importance of Adequate Humidification and Temperature in NIV
 - 1.10.2. Types of NIV Humidification Systems
 - 1.10.3. Indications for Adding Humidifier in Acutely Ill Patients
 - 1.10.4. Indications for Humidifier in Chronic Patients
 - 1.10.5. Methods of NIV Humidification Monitoring
 - 1.10.6. Temperature Adjustment in NIV
 - 1.10.7. Monitoring and Management of Complications Related to Humidity and Temperature in NIMV

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

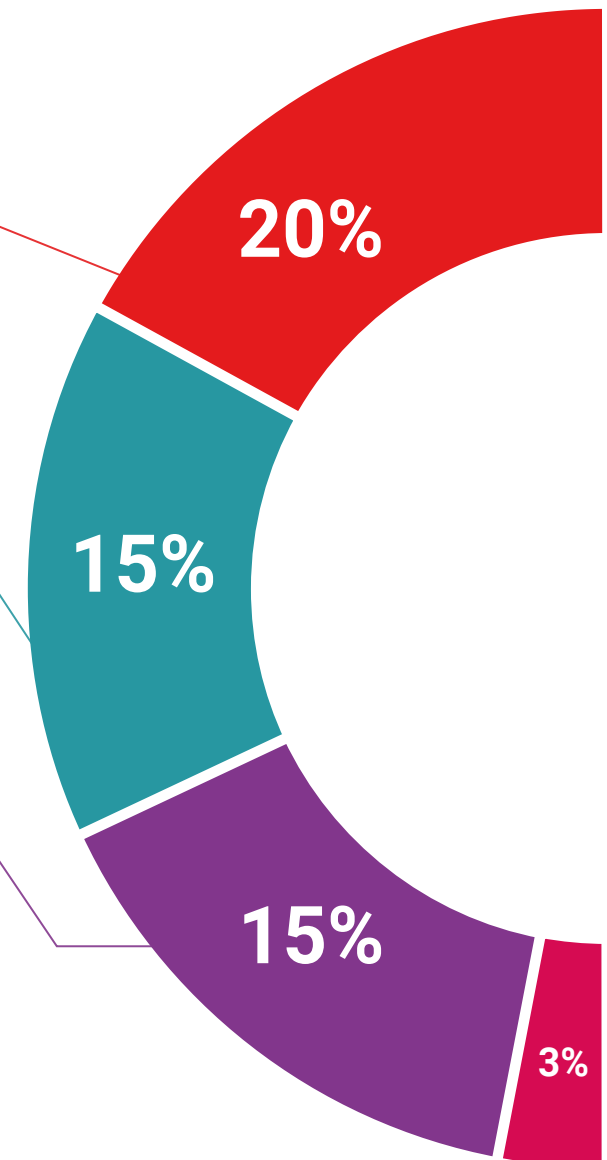
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

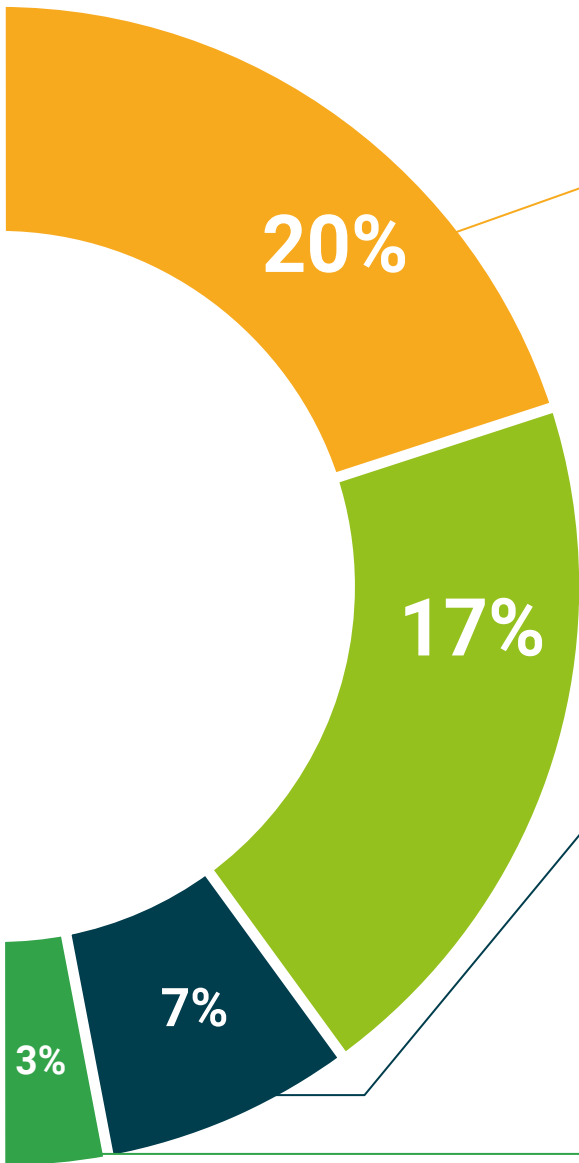
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



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 Respiratory Support Techniques 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 Respiratory Support Techniques 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 Respiratory Support Techniques 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.



Postgraduate Certificate
Non-Invasive Respiratory
Support Techniques for Nursing

- » Modality: online
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- » Schedule: at your own pace
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Postgraduate Certificate

Non-Invasive Respiratory Support Techniques for Nursing

