

Postgraduate Diploma

Respiratory Physiotherapy in
Critically Ill Patients and Techniques
in Rehabilitation Medicine





Postgraduate Diploma Respiratory Physiotherapy in Critically Ill Patients and Techniques in Rehabilitation Medicine

Course Modality: **Online**

Duration: **6 months.**

Certificate: **TECH - Technological University**

18 ECTS Credits

Teaching Hours: **450 hours**

Website: www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-respiratory-physiotherapy-critically-ill-patients-techniques-rehabilitation-medicine

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01

Introduction

Respiratory physiotherapy is of great importance in the care of critically ill patients, since, once stabilized in the ICU, it has been shown that respiratory physiotherapy is the most appropriate technique to improve the patient's condition. Therefore, with this academic program we want to specialize rehabilitation physicians so that they know the most advanced tools and can apply them in their daily practice.



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Improve the health of critically ill patients thanks to the application of new respiratory physiotherapy tools"

Respiratory physiotherapy techniques focus on the pathophysiology of the respiratory system, both medical and surgical, requiring a demanding knowledge of the respiratory system and the existing techniques for its treatment, healing and stabilization. In the care of critical patients, it has become an important focus since it stands out for its benefit to the patients, achieving great improvements. At present, these techniques are necessary and essential in different hospital units.

Taking this into account, it is necessary to understand that the specialization of rehabilitation physicians is very necessary, since the presence of these professionals is increasingly demanded in the ICU, as well as in other areas where critical patients are found. Therefore, with this TECH Postgraduate Diploma we want to offer a high level, up-to-date training, which has the latest information in this field.

Specifically, the program covers everything from the main respiratory techniques in physiotherapy, to the use of these tools in critical patients and, of course, there is space to learn about their application in patients affected by COVID-19 and whose respiratory capacity is impaired by the disease.

The Postgraduate Diploma has been designed teaching staff who specialize in Respiratory Physiotherapy, who contribute both their practical experience from their day-to-day work in practice, as well as their extensive experience in teaching at a national and international level. In addition, it has the advantage of being a 100% online training, so the student can decide from where to study and at what time. This way, you will be able to flexibly self-direct your study hours.

This **Postgraduate Diploma in Respiratory Physiotherapy for Critically Ill Patients and Techniques in Rehabilitation Medicine** contains the most complete and up-to-date scientific program on the market. The most important features of the program include:

- ♦ Clinical cases presented by experts in Respiratory Physiotherapy.
- ♦ The graphic, schematic, and eminently practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional practice.
- ♦ The presentation of practical workshops on procedures and techniques.
- ♦ An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course.
- ♦ Action protocols and clinical practice guidelines, which cover the most important and latest developments in this specialist area.
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments.
- ♦ Special emphasis on test-based medicine and research methodologies.
- ♦ Content that is accessible from any fixed or portable device with an Internet connection.



Keeping up to date is key to providing better care to our patients. That's why at TECH we have designed this Postgraduate Diploma on respiratory physiotherapy in critically ill patients, with which you can acquire superior training in this field"

“ *This program is the best investment you can make when studying a specialist course to update your knowledge in Respiratory Physiotherapy*”

The teaching staff includes a team of prestigious urologists, who bring their experience to this training program, as well as renowned specialists from leading scientific societies.

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 an immersive training experience designed to train for real-life situations.

This program is designed around Problem Based Learning, whereby the physician must try to solve the different professional practice situations that arise during the academic year. For this reason, you will be assisted by an innovative, interactive video system created by renowned and experienced experts in the field of Respiratory Physiotherapy with extensive teaching experience.

This 100% online Postgraduate Certificate will allow you to study from anywhere in the world. All you need is a computer or mobile device with an internet connection

Our innovative teaching methodology will allow you to study as if you were dealing with real cases, and therefore increasing your training



02 Objectives

The **Postgraduate Diploma in Respiratory Physiotherapy for Critically Ill Patients and Techniques in Rehabilitation Medicine** is aimed at facilitating the medical professional's performance with the latest advances and most innovative treatments in the sector. Its objective is to take you through a training that will allow you to acquire the most updated knowledge for the most advanced and competitive praxis in this field.





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With a real practical objective, this course will allow you to achieve your training goals by boosting your CV to a higher level of excellence”



General Objectives

- ♦ Promote specialization in respiratory physiotherapy.
- ♦ Update knowledge and manage physiotherapy in different patients with respiratory pathologies.
- ♦ Possess knowledge of the pathophysiology and advanced exploration of the respiratory system.
- ♦ Execute, direct and coordinate the respiratory physiotherapy intervention plan for each patient.



Specific Objectives

Module 1.

- ♦ Gain in-depth knowledge of the physiological mechanisms of the respiratory system.
- ♦ Gain in-depth knowledge of the treatment techniques in respiratory physiotherapy.
- ♦ Apply different techniques.
- ♦ Handle instrumental devices.

Module 2

- ♦ Delve into respiratory physiotherapy in ICUs.
- ♦ Manage the different respiratory techniques in critical patients.
- ♦ Apply pre/post surgery exercise programs.

Module 3

- ♦ Manage respiratory physiotherapy treatment in COVID-19 critical care units.
- ♦ Apply the correct respiratory physiotherapy treatment in the ward.
- ♦ Become familiar with new scenarios of physical therapy intervention in the post-COVID era.



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Highly specialized objectives in a training course created to train the best professionals in Respiratory Physiotherapy”

03

Course Management

The materials in the course have been created by a team of leading professionals in Respiratory Physiotherapy, who work in the main reference hospitals, bringing to the program the experience they have gained in their jobs throughout their careers.





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The best professionals in this area have joined forces to offer you the most specialized and up-to-date knowledge in the field"

Management



García Coronado, Luis Pablo

- Physiotherapist at La Paz University Hospital
- Supervisor of the Physiotherapy Department at La Paz University Hospital.
- Specialist in sports Physiotherapy, Re-training, electrotherapy, Pilates and Therapeutic exercise.
- Director at Fisioespaña C. B.
- Director at Fisioganas S.L.
- Director at Pilates Wellness & Beauty S.L.

Teachers

Dr. Macías Gaspar María José

- ♦ Physiotherapist at Beata Maria Ana Hospital since 2021.6. Physiotherapy in hospitalized patients, neurological patients and patients with surgeries and traumatic injuries. Internship tutor for students of the European University.
- ♦ Physiotherapist at La Paz University Hospital since 2018.
- ♦ Physiotherapy in Pediatrics: On the ward, in rooms, in neonates and ICU, Physiotherapy in patients hospitalized in ICU, AER, patients with surgeries and traumatic injuries, and patients with traumatologic injuries.
- ♦ Diploma in Physiotherapy with specialization in Pediatric Physical Therapy and Manual Therapy in Traumatology and Orthopedics.
- ♦ Master's Degree in Pediatric Physiotherapy at CEU San Pablo in Madrid
- ♦ Master's Degree in Osteopathy at the D. François Ricard School of Osteopathy in Madrid
- ♦ Teaching, assistance and management functions. Clinical reasoning adapted to each individual.
- ♦ Expert in Respiratory and Cardiac Physiotherapy.

Peroy Badal, Renata

- ♦ Physiotherapist in charge of Respiratory Rehabilitation for COPD patients. Virgen de la Torre hospital.
- ♦ Respiratory physiotherapy in critical patients admitted to the ICU and in pre- and postoperative patients undergoing abdominal surgery discharged from the inpatient unit.
- ♦ Respiratory physiotherapy in adult and pediatric patients with spinal cord injuries and different neuromuscular pathologies associated with respiratory disorders

- ♦ Degree in Physiotherapy: 1996-1999 Gimbernat University School of Nursing and Physiotherapy (Autonomous University of Barcelona)
- ♦ Graduate in Physiotherapy: 2013-2014 Complutense University of Madrid with the dissertation "Health Education in Respiratory Rehabilitation in COPD in primary care".
- ♦ Official Master's Degree in Respiratory and Cardiac Physiotherapy: 2015-2016. ONCE University School of Physiotherapy (Complutense University of Madrid)
- ♦ D.U EN KINESITHERAPIE RESPIRATORIE ET CARDIOVASCULAIRE: 2007-2008. Université Claude Bernard-lyon with the article "Education before upper abdominal surgery: patient-physiotherapist co-construction of a therapy booklet".

Pérez-Esteban Luis-Yagüe, Teresa

- ♦ Physiotherapist at Gregorio Marañón General University Hospital. November 2019-20 septiembre 2020
- ♦ Specialist in Respiratory Physiotherapy. University of Castilla La Mancha-Toledo
- ♦ Master's Degree in Manual Physical Therapy of the Locomotor System. University of Alcalá-Madrid
- ♦ Degree in Physiotherapy. Pontificia University of Salamanca, Salus Infirmorum-Madrid
- ♦ Online course of Basic Radiology for Physical Therapists.
- ♦ Therapeutic exercise update program by the Consejo Gral. Colegios de Fisioterapeutas de España (Spanish General Council of Physiotherapists' Associations)

04

Structure and Content

The structure of the syllabus has been designed by a team of professionals who understand the implications of medical training in the approach to patient care, who are aware of the relevance of current training and are committed to quality teaching through new educational technologies.





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A very complete syllabus that will take you gradually through each and every one of the lessons that the Respiratory Physiotherapy professional needs. With an added bonus: the commitment to excellence that characterizes us"

Module 1. Respiratory Techniques in Physiotherapy

- 1.1. Historical Evolution of Respiratory Physiotherapy
 - 1.1.1. Different Schools of Respiratory Physiotherapy
 - 1.1.2. Different Classification of Respiratory Physiotherapy
- 1.2. Respiratory Physiotherapy Objectives
 - 1.2.1. General Objectives
 - 1.2.2. Specific Objectives
- 1.3. Physiological Mechanisms to Understand the Techniques of Respiratory Physiotherapy
 - 1.3.1. Rocher Equation
 - 1.3.2. Poiseuille's Law
 - 1.3.3. Collateral Ventilation
- 1.4. Treatment Techniques in Respiratory Physiotherapy
 - 1.4.1. Forced Inspiratory Techniques
 - 1.4.2. Slow Expiratory Techniques
 - 1.4.3. Forced Expiratory Techniques
 - 1.4.4. Slow Inspiratory Techniques
- 1.5. Secretions Drainage Techniques
 - 1.5.1. Techniques Based on Gravity
 - 1.5.2. Techniques Based on Shock Waves
 - 1.5.3. Techniques Based on Air Flow
- 1.6. Lung Expansion Techniques
 - 1.6.1. EDIC
 - 1.6.2. Encouraged Spirometry
 - 1.6.3. Air Staking
- 1.7. Ventilatory Techniques
 - 1.7.1. Directed Costal Ventilation Technique
 - 1.7.2. Targeted Abdomino-Diaphragmatic Ventilation Technique
- 1.8. Instrumental Devices
 - 1.8.1. Cough Assist®
 - 1.8.2. Vibration Vests

- 1.8.3. Percussionaire®

- 1.9. Aerosol Therapy
 - 1.9.1. Type of Nebulizers
 - 1.9.2. Type of Inhalers
 - 1.9.3. Inhalation Technique
- 1.10. Health Education and Relaxation
 - 1.10.1. Importance of Health Education in Chronic Pathologies
 - 1.10.2. Importance of Relaxation in Chronic Pathologies

Module 2. Respiratory Physiotherapy in Critically Ill Patients

- 2.1. Critically Ill Patients
 - 2.1.1. Definition
 - 2.1.2. Different Critical Patient Work Units
 - 2.1.3. Multidisciplinary Work Team
- 2.2. Critical Unit
 - 2.2.1. Basic Knowledge of Patient Monitoring
 - 2.2.2. Different Oxygen Support Devices
 - 2.2.3. Health Worker Protection
- 2.3. Physiotherapy in the ICU
 - 2.3.1. Intensive Care Unit
 - 2.3.2. Role of the Professional in this Unit
 - 2.3.3. Principles of Mechanical Ventilation Monitoring of Mechanical Ventilation
- 2.4. Physiotherapy in the Thoracic Area
 - 2.4.1. Thoracic Resuscitation Unit
 - 2.4.2. Pleure-back and Pulmonary Drainage Devices
 - 2.4.3. Basic Notions in Thoracic Radiography
- 2.5. Physiotherapy in the Coronary Unit
 - 2.5.1. Cardiac Pathology Sternotomies
 - 2.5.2. Main Heart Surgeries and Treatment
 - 2.5.3. Breathing Exercise Programs Pre/Post Surgery
 - 2.5.4. Complications and Contraindications

- 2.6. Physiotherapy in Neuromuscular Patients
 - 2.6.1. Concept of Neuromuscular Disease (NMD) and Main Characteristics
 - 2.6.2. Respiratory Alterations in NMD and Complications with Hospital Admission
 - 2.6.3. Main Respiratory Physiotherapy Techniques Applied to NME (Hyperinflation and Assisted Cough Techniques)
 - 2.6.4. Phonatory Valve and Suction Techniques
 - 2.7. Paru
 - 2.7.1. Post-Anesthesia Resuscitation Unit
 - 2.7.2. Sedation Basic Concepts of Pharmacology
 - 2.7.3. Importance of Early Mobilization of Patients and Sedation
 - 2.8. Physiotherapy in Neonatal ICU and Pediatrics
 - 2.8.1. Embryonic Factors: Antenatal and Postnatal Factors that Determine Lung Development
 - 2.8.2. Frequent Respiratory Pathologies in Neonatology and Pediatrics
 - 2.8.3. Treatment Techniques
 - 2.9. Approach to Bioethics
 - 2.9.1. Code of Ethics
 - 2.9.2. Ethical Issues in Critical Care Units
 - 2.10. Importance of Family and the Environment During the Process of Recovery
 - 2.10.1. Emotional Factors
 - 2.10.2. Guidelines for Accompaniment
- Module 3. Respiratory Physiotherapy in COVID**
- 3.1. Introduction
 - 3.1.1. Covid-19 Origin
 - 3.1.2. Evolution of the Coronavirus Epidemic
 - 3.1.3. Confinement and Quarantine
 - 3.2. Vision Development
 - 3.2.1. Clinical Picture
 - 3.2.2. Methods and Detection Tests and Analyses
 - 3.2.3. Epidemiological Curve
 - 3.3. Aisilation and Protection
 - 3.3.1. P.P.E. Personal Protective Equipment
 - 3.3.2. Types of Respiratory Protection Masks
 - 3.3.3. Hand Washing and Personal Hygiene
 - 3.4. Pathophysiology in Covid-19
 - 3.4.1. Desaturation and Worsening from the Physical Therapy Point of View
 - 3.4.2. Complementary Tests
 - 3.5. Patient Admitted to Hospital Pre-ICU/Post-ICU
 - 3.5.1. Risk Factors and Aggravating Factors
 - 3.5.2. Criteria for Patient Admission to an Inpatient Unit
 - 3.5.3. Critical Care Unit Admission
 - 3.6. Critically Ill Covid-19 Patient
 - 3.6.1. Characteristics of Critical Patients Average Length of Stay
 - 3.6.2. Monitoring of Mechanical Ventilation Vmi/VMNI
 - 3.6.3. Weaning Methods in Case of Improvement of the Clinical Picture
 - 3.7. After-effects of Critical Patients
 - 3.7.1. Barthel's Scale
 - 3.7.2. Daudi. Post-ICU Acquired Weakness
 - 3.7.3. Swallowing Disorders
 - 3.7.4. Basal Hypoxemia
 - 3.8. Separ Guide
 - 3.8.1. Research in Covid
 - 3.8.2. Scientific Articles and Bibliographic Reviews
 - 3.9. Respiratory Physiotherapy Treatment
 - 3.9.1. Respiratory Physiotherapy Treatment in Covid-19 Critical Care Units.
 - 3.9.2. On-site Respiratory Physiotherapy Treatment.
 - 3.9.3. Discharge Recommendations.
 - 3.10. Post-Covid-19 Era
 - 3.10.1. New Scenarios of Intervention in Physiotherapy.
 - 3.10.2. Preventative Actions

05

Methodology

This training program provides you with a different way of learning. Our methodology uses a cyclical learning approach: *Re-learning*.

This teaching system is used 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 Re-learning, 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 we use the Case Method

In a given situation, what would you do? Throughout the program, you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, resolve the situation. There is abundant scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

With TECH you can experience a way of learning 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 potential or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in professional medical 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. Students 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 student to better integrate into the real world.
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.



Re-learning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Re-learning.

Our University is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, which represent a real revolution with respect to simply studying and analyzing cases.



The physician 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 Re-learning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best Spanish-speaking online university (Columbia University).

With this methodology we have trained more than 250,000 physicians with unprecedented success, in all clinical specialties regardless of the surgical load. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

Re-learning 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 (we learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by our learning system is 8.01, according to the highest international standards.



In this program you will have access to the best educational material, prepared with you in mind:



Study Material

All the teaching materials are specifically created for the course, by specialists who teach on the course, so that the teaching content is highly specific and precise.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



Latest 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 this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.



Interactive Summaries

We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



Additional Reading

Recent articles, consensus documents, international guides. in our virtual library you will have access to everything you need to complete your training.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the expert will guide you through focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



Testing & Re-Testing

We periodically evaluate and re-evaluate your knowledge throughout the program, through assessment and self-assessment activities and exercises: so that you can see how you are achieving your 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 our future difficult decisions.



Quick Action Guides

We offer you the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help you progress in your learning.



06 Certificate

The **Postgraduate Diploma in Respiratory Physiotherapy in Critically Ill Patients and Techniques in Rehabilitation Medicine** guarantees you, in addition to the most rigorous and updated training, access to a Postgraduate Diploma issued by **TECH Technological University**.



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Successfully complete this training and receive your university qualification without travel or laborious paperwork”

This **Postgraduate Diploma in Respiratory Physiotherapy for Critically Ill Patients and Techniques in Rehabilitation Medicine** contains the most complete and up-to-date scientific program on the market.

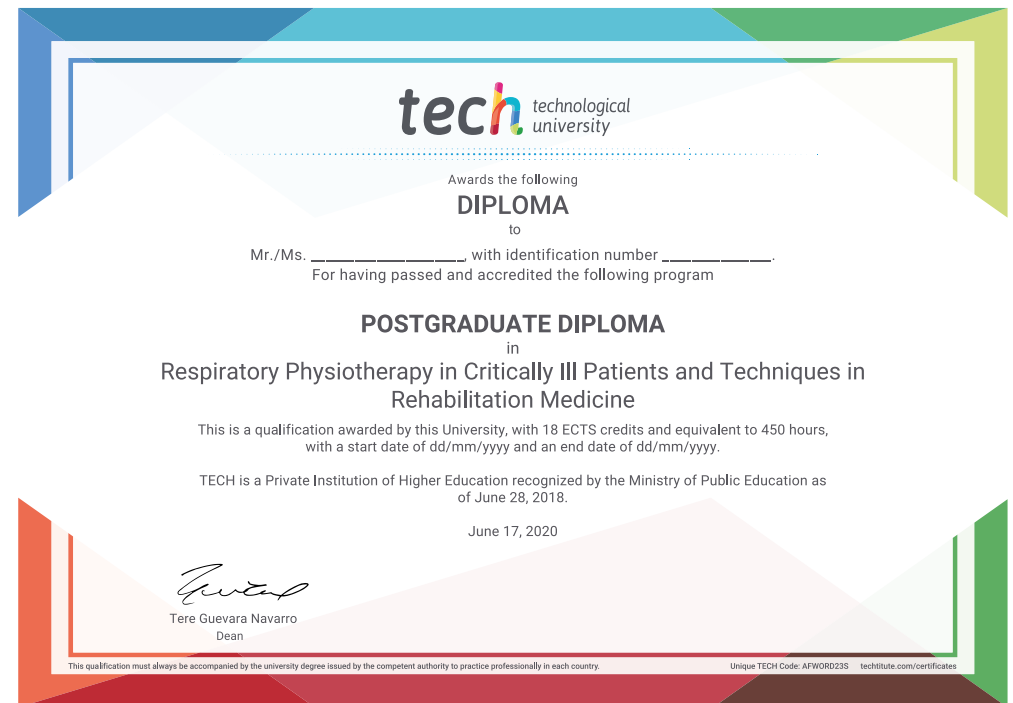
After the student has passed the evaluations, they will receive their corresponding **Postgraduate Diploma** issued by **TECH Technological University** via tracked delivery*.

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

Title: **Postgraduate Diploma in Respiratory Physiotherapy in Critically Ill Patients and Techniques in Rehabilitation Medicine**

ECTS: **18**

Official Number of Hours: **450**



*Apostille Convention. In the event that the student wishes to have their paper diploma Apostilled, TECH EDUCATION will make the necessary arrangements to obtain it at an additional cost of €140 plus shipping costs of the Apostilled diploma.

health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present
development languages
virtual classroom



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