

# Postgraduate Certificate

## Lung Transplantation





## Postgraduate Certificate Lung Transplantation

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Accreditation: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/medicine/postgraduate-certificate/lung-transplantation](http://www.techtute.com/us/medicine/postgraduate-certificate/lung-transplantation)

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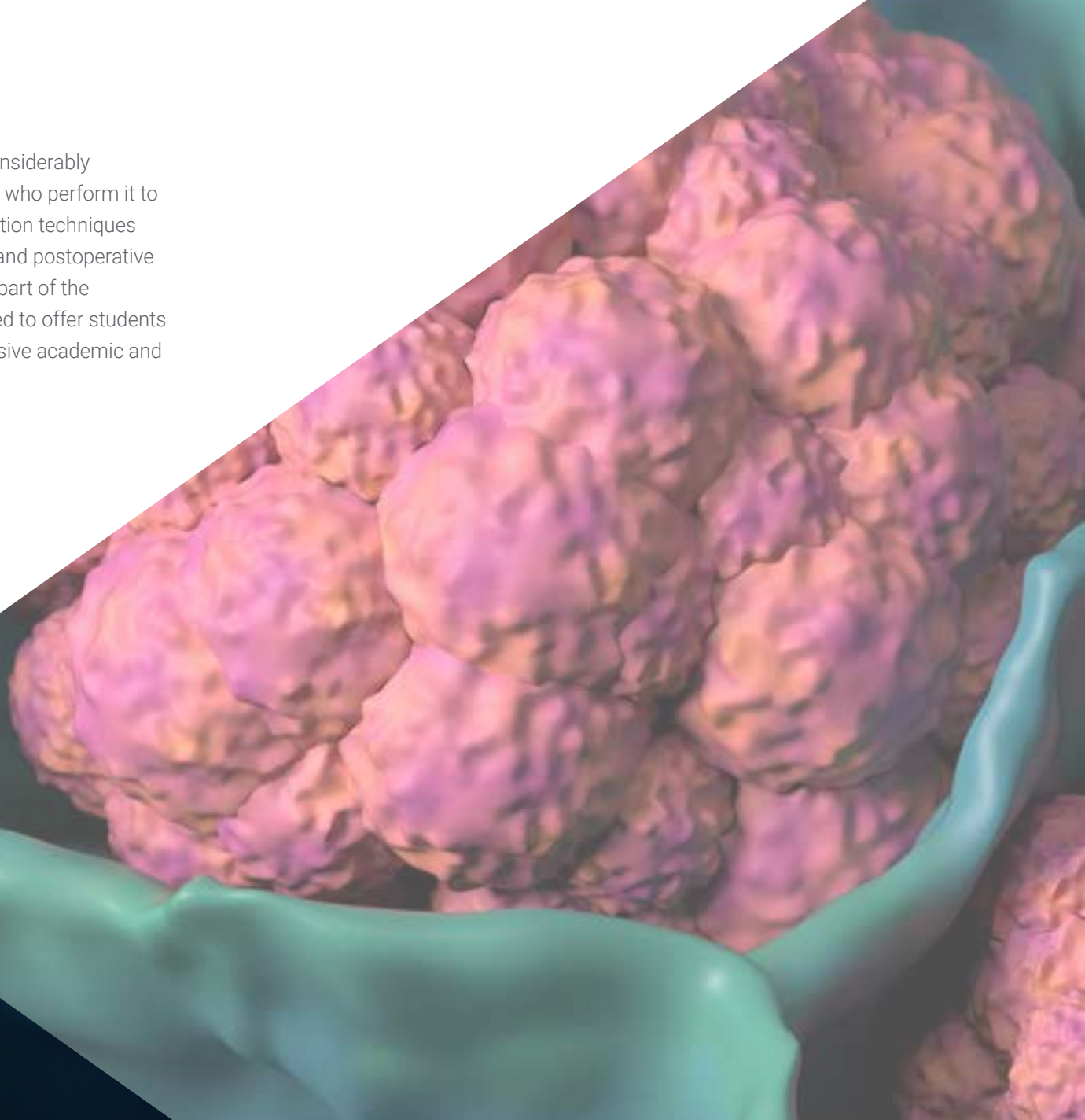
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# 01

# Introduction

Lung transplantation is only offered in certain hospitals as it is a considerably complex process, and it is of the utmost importance for specialists who perform it to possess the knowledge of its continuous evolution. Recipient selection techniques have advanced enormously in recent years, as have intraoperative and postoperative cardiorespiratory care and ex vivo evaluation systems. This is only part of the advances that specialists will find included in this program, designed to offer students the best possible update in this area from professionals with extensive academic and healthcare experience.





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*Update your daily practice with the most recent analyses of the quality of life of transplant patients, as well as survival rates and subgroup assessments”*

Recent developments in surgical techniques for lung explant, bench surgery and graft implantation have promoted an unbeatable framework for specialists. Being highly qualified in this field is essential to continue offering the best professional practice, so this program provides specialists with an unbeatable opportunity to access the most recent scientific postulates on Lung Transplantation.

To ensure the quality of all the contents offered, TECH has assembled a great professional team that brings together extensive experience in the area of Pulmonology. The didactic material elaborated reflects their high capabilities in the academic and clinical field, with an extensive syllabus that addresses early complications in Lung Transplantation, postoperative management and even recent indications and limitations regarding re-transplantation.

All this in an online format that respects the high level of professionalism that specialists demand. All the contents are available for download from the first day on the course, so specialists will not have to attend any type of classroom or adhere to predetermined schedules. At TECH, it is the student who decides when, where and how to take on the entire course load.

This **Postgraduate Certificate in Lung Transplantation** contains the most complete and up-to-date educational program on the market. Its most notable features are:

- Practical cases presented by experts in Pulmonology
- 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
- Practical exercises where self-assessment can be used to improve learning
- Special emphasis is placed on innovative methodologies in the approach to respiratory failure and Lung Transplantation
- 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



*This is the best academic choice to update your knowledge of Lung Transplantation, supported by the largest educational institution in Spanish"*

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*Learn about the most innovative methodology for hyperacute rejection, primary graft dysfunction or complications derived from the surgical procedure”*

*Thanks to TECH's teaching methodology, you will update all your knowledge of lung transplantation surgical techniques in an effective way.*

*You will thoroughly learn the latest developments in the most advanced cardiorespiratory assistance when performing lung transplants.*

The program's teaching staff includes professionals from the sector who contribute their work experience to this training 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 training programmed to train 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 student will be assisted by an innovative interactive video system created by renowned and experienced experts.



# 02 Objectives

Since the surgical technique that requires the highest level of expertise from specialists, the objective of this course is to offer the best possible update in terms of technology, theoretical framework and scientific evidence of lung transplantation. Specialists will thus update all their knowledge of this area of specialization, always based on the most relevant and vigorous scientific postulates.





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*Your professional goal and TECH's are aligned, so you will find a technical and professional team ready to give you everything you need to continue offering the best care in Lung Transplantation”*



## General Objectives

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- Provide an update on the latest scientific evidence available in published guidelines, scientific articles and systematic reviews
- Address the fundamental aspects in treating pulmonary pathologies
- Update knowledge of the most frequent pathologies in Pulmonology

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*Thanks to TECH's teaching methodology, specialists will achieve their update objective even before completing the course by gradually incorporating all the knowledge into their daily practice”*





## Specific Objectives

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- ♦ Know the indications and contraindications for potential Lung Transplantation, as well as the referral criteria to a Lung Transplantation Unit
- ♦ Possess the necessary criteria to include patients on the lung transplantation waiting list
- ♦ Understand how donor selection and lung transplant surgical techniques are performed
- ♦ Know how to detect potential complications derived from lung transplants that may be encountered in consultation or during hospital admission where there is no Lung Transplant Unit
- ♦ Gain a deeper understanding of the use of immuno-suppressive treatments and prophylaxis in Lung Transplant patients, as well as in the complications derived from them
- ♦ Thoroughly understand the possible long-term complications in lung transplant patients
- ♦ Know how to determine when an urgent/preferential referral to the Lung Transplant Unit is necessary



03

# Course Management

Since this is an area of specialization that requires the most highly trained and skilled specialists, TECH has selected leading Pulmonologists to prepare the contents on this program. This guarantees that specialists have access to material written from the vast personal experience of the teaching staff, with a scientific basis of the highest level. The advanced professionalism and administrative skills of our professors add value to the whole update experience for specialists.



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*You will find a close and highly qualified faculty to give you the best possible update in Lung Transplantation”*



## International Guest Director

Dr. Franck Rahaghi is one of the most prolific international figures in the field of **Pneumology**. Noted for his leadership in quality and medical care, as well derived his commitment to clinical research, he has held several important positions at Cleveland Clinic, Florida. Notable among them are his roles as **Chairman of Quality, Medical Director of the Department of Respiratory Care and Director of the Pulmonary Hypertension Clinic**.

Thanks to his studies and continuous preparation in this discipline, he has made several contributions in the **rehabilitation of patients with various respiratory pathologies**. These contributions and permanent academic improvement have allowed him to assume other responsibilities such as the position of **Head of the Department of Pulmonary Education and Rehabilitation**. In addition, he is a member of the Internal Review Committee, responsible for **supervising the correct execution of research and clinical trials** (Activated Protein C and IFN gamma-1b) inside and outside the aforementioned health institution.

In his solid preparation, he has established care links with centers of excellence such as the **Rockefeller University Hospital in New York**, as well as the Internal Medicine programs at the **University of Illinois at Chicago and the University of Minnesota**. He also studied at the **Department of Interventional Pulmonary Pulmonology and Pulmonary Hypertension at the University of California-San Diego**. He has also participated in important academic projects as an instructor in Genetic Medicine.

Dr. Rahaghi has authored and co-authored numerous articles published in renowned scientific journals in the medical field. Among the most recent and significant studies he has unveiled are his researches on the **impact of COVID-19 on the respiratory health of patients**, specifically on its effects in **controlling Pulmonary Hypertension**.

His other fields of interest include **Scleroderma, Sarcoidosis AATD and ILD/IPF**. He is also a consulting member of MedEdCenter Incorporated, a non-profit corporation dedicated to **providing educational materials focused on pulmonary pathologies**. An initiative from where he is committed to promote the education of patients and physicians through new technologies.



## Dr. Rahaghi, Franck

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- Medical Director, Department of Respiratory Care, Cleveland Clinic Hospital, Florida, USA
- Director of the Pulmonary Hypertension Clinic attached to the
- Cleveland Clinic Hospital, Florida, USA.
- Bachelor of Science (BS), Bioengineering and Biomedical Engineering from the University of San Diego.
- Master's Degree in Health Sciences/Administration at UC Berkeley

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

## Management



### **Dr. Jara Chinarro, Beatriz**

- ♦ Acting Chief of the Pneumology Department, Puerta de Hierro University Hospital, Majadahonda
- ♦ Degree in Medicine and Surgery, Complutense University Madrid
- ♦ MIR Pulmonary Specialist
- ♦ Specialist in sleep disorders, CEAMS



### **Dr. Ussetti Gil, Piedad**

- ♦ Emeritus Advisor in the Pulmonology Department, Puerta de Hierro University Hospital, Majadahonda
- ♦ Degree in Medicine and Surgery, Central University of Barcelona
- ♦ Specialist in Pulmonology
- ♦ Executive Master's Degree in Healthcare Leadership ESADE
- ♦ Honorary Professor in the Medicine Department, Autonomous University of Madrid



## Professors

### Dr. Aguilar Pérez, Myriam

- ♦ Specialist Physician in the Pulmonology Service, Puerta De Hierro University Hospital
- ♦ Completion of doctoral courses in Pneumology, Department of Medicine, Complutense University of Madrid
- ♦ Degree in Medicine and Surgery, Complutense University of Madrid
- ♦ Specialist in Pulmonology

# 04

## Structure and Content

TECH is a pioneer in the use of *Relearning* in its programs, as it is the only university in Spanish licensed to use it as a study method. On this program, specialists will incorporate all the most relevant concepts of Lung Transplantation to their daily practice in a progressive and natural way. This lightens the course load and makes it possible to get the most out of all the time and effort invested in the program.





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*You will have at your disposal the most cutting-edge educational technology, with extensive interactive summaries, practical guides and real clinical cases that will help you contextualize all the theory”*

## Module 1. Lung Transplantation

- 1.1. Lung Transplantation
  - 1.1.1. Historical Recollection
  - 1.1.2. Evolution in Recent Years: Demographic Review, Analysis by Pathologies and Survival
- 1.2. Receptor Selection
  - 1.2.1. Absolute Contraindications
  - 1.2.2. Relative Contraindications
  - 1.2.3. Pathology-Related Referral Indications to Lung Transplant Units
    - 1.2.3.1. Common Interstitial Pneumonia / Non-Specific Interstitial Pneumonia
    - 1.2.3.2. Chronic Obstructive Pulmonary Disease
    - 1.2.3.3. Cystic fibrosis
    - 1.2.3.4. Pulmonary Hypertension
  - 1.2.4. Lung Transplant Waiting List Indications by Pathology
    - 1.2.4.1. Common Interstitial Pneumonia / Non-Specific Interstitial Pneumonia
    - 1.2.4.2. Chronic Obstructive Pulmonary Disease
    - 1.2.4.3. Cystic Fibrosis
    - 1.2.4.4. Pulmonary Hypertension
- 1.3. Donor Selection
  - 1.3.1. Brain-Dead Donor
  - 1.3.2. Asystole Donor
  - 1.3.3. Exvivo Evaluation System
- 1.4. Surgical Technique
  - 1.4.1. Affected Lung Explant
  - 1.4.2. Bench Surgery
  - 1.4.3. Graft Implant
- 1.5. Cardiorespiratory Assistance
  - 1.5.1. ECMO as a Bridge to Transplantation
  - 1.5.2. Intraoperative ECMO
  - 1.5.3. Postoperative ECMO





- 1.6. Lung Transplantation Complications
  - 1.6.1. Hyperacute Rejection
  - 1.6.2. Primary Graft Dysfunction
  - 1.6.3. Surgical Complications
  - 1.6.4. Perioperative Infections
- 1.7. Postoperative Care
  - 1.7.1. Immunosuppressive Treatment
  - 1.7.2. Infectious Prophylaxis
  - 1.7.3. Monitoring
- 1.8. Late Complications in Lung Transplantation
  - 1.8.1. Acute Cell Rejection (Early and Late)
  - 1.8.2. Chronic Graft Dysfunction: *Chronic Lung Allograft Dysfunction (CLAD)*
    - 1.8.2.1. Types
    - 1.8.2.2. Treatment
  - 1.8.3. Tumors
    - 1.8.3.1. Cutaneous Tumors
    - 1.8.3.2. Post-Transplant *Lymphoproliferative Syndrome*
    - 1.8.3.3. Solid Tumors
    - 1.8.3.4. Kaposi's Sarcoma
  - 1.8.4. Infections
  - 1.8.5. Other Common Complications
    - 1.8.5.1. Diabetes Mellitus
    - 1.8.5.2. Hyperlipidemia
    - 1.8.5.3. High Blood Pressure
    - 1.8.5.4. Acute and Chronic Kidney Failure
- 1.9. Quality of Life and Survival
  - 1.9.1. Quality of Life Analysis
  - 1.9.2. Survival Data; Evaluation by Subgroups
- 1.10. Re-transplantation
  - 1.10.1. Indications and Limitations
  - 1.10.2. Survival and Quality of Life



# 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 we use the Case Method

What should a professional do in a given situation? 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. Specialists learn better, faster, and more sustainably over time.

*With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.*



According to Dr. Gervas, 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, trying to recreate the real conditions in the physician's professional 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 achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into 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.



## 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 the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

*Professionals will learn through real cases and by resolving 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, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. 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 highly 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.



#### Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and 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 the videos as many times as you like.



#### 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 Lung Transplantation 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 a **Postgraduate Certificate in Lung Transplantation** 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.

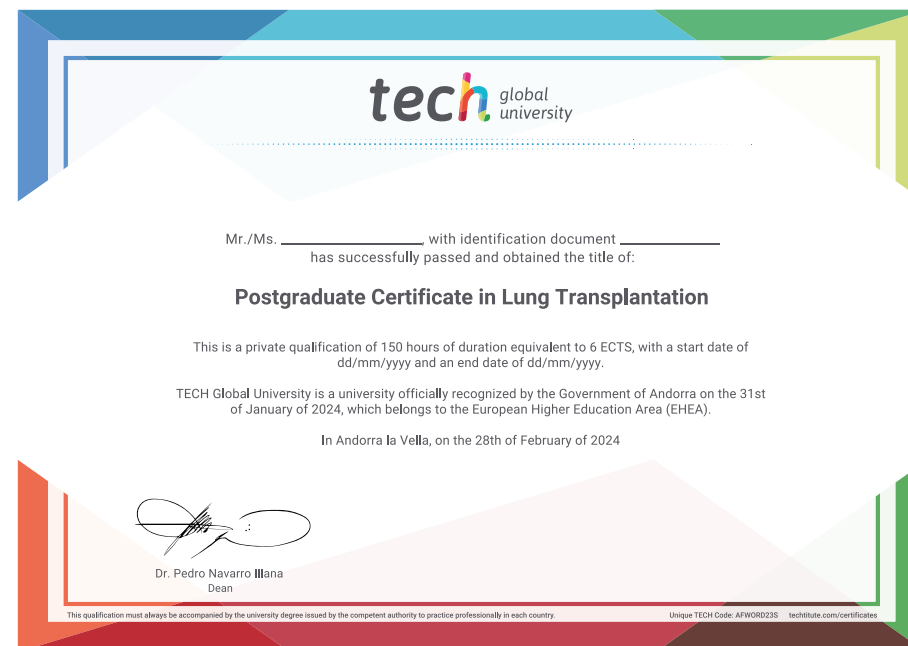
This **TECH Global University title**, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Lung Transplantation**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



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



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