Postgraduate Diploma

Big Data in Pulmonology

tech global university

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Postgraduate Diploma

Big Data in Pneumology

- Modality: **online**
- Duration: **6 months**
- Certificate: **TECH Global University**
- Credits: **18 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-diploma-big-data-pulmonology

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01

Introduction

In the field of medicine, in this second decade of the 21st century, one of the elements that has become an important point in the diagnosis of diseases is the transition from medical records to digitalization, as well as the emergence of new sources of information and the ability of experts to analyze and interpret such data. It is estimated that this database will double in size every two years, so that by 2020 there will be 50 times more information than in 2011. In this context, studying the conceptual aspects of this database called Big Data helps the professional to improve his medical work and learn about all types of diseases. Therefore, this program in Big Data and Pulmonology updates the student's knowledge in an area that is highly demanded worldwide.

The Big Data Program brings together in one place a wealth of information from patients distributed around the world."

Big Data is a program that has a huge amount of data that grows exponentially every year. For respiratory pathologies, it can hold a large amount of data from patients' medical records or from the multiple electronic monitoring devices that many have with them. It is an important tool nowadays, due to the speed with which information is produced and collected, allowing professionals to analyze the state of individual or population health, improve the early approach to each patient and make more accurate decisions to generate a timely diagnosis.

In practice, taking advantage of the enormous processing and analysis capacity of this program represents a qualitative leap in the treatment of respiratory diseases. Starting from this point, this Postgraduate Diploma in Big Data in Pulmonology seeks to show in depth the conceptual aspects of precision medicine and the use of information sources that the program provides to professionals.

In addition, it is an excellent opportunity to learn about the applications of Big Data in the study of the epidemiology of respiratory diseases, making use of the procedures used in these pathologies, as well as in obstructive respiratory diseases and disorders related to sleep.

By the end of the modules, it will be possible to have a broader perspective of the usefulness of Big Data when detecting the infectious origin of some diseases, and how environmental pollution has a major impact on respiratory infections. Other diseases such as lung cancer, interstitial diseases, pulmonary thromboembolism and pulmonary hypertension will also be evaluated.

This **Postgraduate Diploma in Big Data in Pulmonology** contains the most complete and up-to-date scientific program on the market. The most important features of the program include:

- The development of case studies presented by experts in Big Data in Pulmonology.
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice.
- Practical exercises where to perform the self-assessment process to improve the learning process
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection

Meet your professional goals and grow in your field with a Postgraduate Diploma focused on the relationship between Big Data and Pulmonology".

Learn about the relationship between the environment and respiratory diseases through information stored in Big Data.

The professors of this Postgraduate Diploma in Big Data in Pulmonology are professionals with years of experience in the sector.

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 professional will be supported by an innovative interactive video system created by renowned and experienced experts.

02

Objectives

In order to specialize in a specific area and have new competencies, it is important for the student to have a program that helps them achieve new goals. TECH's objective is to guarantee a theoretical and practical education for its students to reach their maximum potential in their working life. With this in mind and always seeking excellence, a program has been developed that allows students to update their knowledge of the profession they practice, emphasizing those key aspects of Big Data in Pulmonology, establishing a series of general and specific objectives for the greater satisfaction of the future graduate, of which the following stand out:

Learn from a theoretical-practical perspective and boost your career in an area of medicine with high professional growth".

General Objectives

- Provide in-depth knowledge on the relationship between Big Data and Pulmonology.
- Interpret and generate knowledge with the information provided by primary and secondary sources in the area of Genetics.
- Improve evaluation for prognosis and prevention of respiratory diseases.
- Understand the precision treatment of pulmonary pathology in the daily practice of medicine.
- Acquire a solid knowledge of the different pulmonary pathologies and their genetic basis.

Knowing the applications of Big Data in Pulmonology allows professionals to have at their disposal an immense volume of information to improve their diagnoses."

Specific Objectives

Module 1. Personalized Precision Medicine and Big Data in Pulmonology prelude

- Delve into the health care and ethical implications of Precision Medicine.
- Study in depth the sources of information on Precision Medicine.
- Master the "omic biomarkers " of interest in Pulmonology.
- Determine the contribution of specific care in personalized care.

Module 2. Big Data and Respiratory Diseases I

- Know the applications of Big Data in the study of the epidemiology of Respiratory Diseases.
- Discuss the usefulness of Big Data in the evaluation of procedures used in respiratory pathology.
- Explain how Big Data can help in the study of risk factors for Respiratory Diseases.
- Describe the utility of Big Data in the management of obstructive diseases and sleep ventilation disorders.

Module 3. Big Data and Respiratory Diseases II

- Know the usefulness of Big Data in the study of Respiratory Diseases of infectious origin.
- Discuss the use of Big Data to assess the impact of environmental pollution on respiratory infections.
- Study in depth the importance of Big Data in the evaluation of other Respiratory Diseases such as pleural pathology, lung cancer, interstitial diseases, pulmonary thromboembolism and pulmonary hypertension..
- Describe the applications of Big Data in the field of Neonatal Onset Respiratory Diseases.

03

Course Management

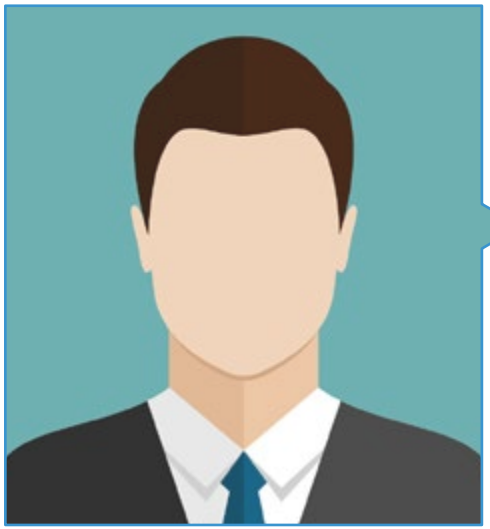
The Postgraduate Diploma in Big Data in Pulmonology has a group of experts with extensive experience in this field, thus fulfilling TECH's goal of always providing its students with a quality education that can be translated into a contribution to their professional growth. Our specialists always have the necessary knowledge and the best tools for the development of the topics. In this way, students have the guarantees they need to specialise at an international level in a booming sector that will catapult them to professional success.

For TECH the main objective is to provide education of high international standards through a high-level professional team".

Management

Dr. Puente Maestu, Luis

- Professor of Pulmonology, Department of Medicine, Universidad Complutense de Madrid.
- Chief of the Pulmonology Department of the Hospital Generaluniversitario Gregorio Marañón
- Degree in Medicine from the Complutense University of Madrid.
- Specialist in Pulmonology, Universidad Complutense de Madrid.
- Doctor *Cum Laude* in Medicine from the Complutense University of Madrid.
- Master's Degree in Design and Statistics in Health Sciences from the Autonomous University of Barcelona.
- University Master's Degree in Senior Management of Health Services and Business Management of the University of Alcala



Dr. De Miguel Díez, Javier

- Section Chief and Resident Tutor in the Pulmonology Department of the Hospital General Universitario Gregorio Marañón.
- PhD in Medicine and Surgery from the Autonomous University of Madrid.
- Master's Degree in Healthcare Management
- University Master's Degree in Smoking
- Master's Degree in Advances in Diagnosis and Treatment of Airway Disease
- Postgraduate master's degree in Advances in Diagnosis and Treatment of Sleep Disorders
- Master's Degree in Advances in Diagnosis and Treatment of Diffuse Interstitial Lung Diseases
- Master in Pulmonary Hypertension and Master in Thrombotic Pathology.

Professors

Dr. González, Francisco Javier

- Director of the High Complexity Asthma Specialized Unit, Hospital Clínico Universitario de Santiago de Compostela.
- Specialist in Pulmonology University Clinical Hospital of Santiago de Compostela
- Associate Professor of Health Sciences University of Santiago de Compostela
- Miembro del Comité Editorial de International Journal of Environmental Research and Public Health

Dr. España Yandiola, Pedro Pablo.

- Head of the Medical/Technical Service, Pulmonology Department, Hospital Galdakao-Usánsolo, Basque Country.
- Degree in Medicine and Surgery from the University of the Basque Country.
- Doctor of Medicine and Surgery, University of the Basque Country.
- Professional Master's Degree in Clinical Units Management

Big Data is a program that grows exponentially every year, housing a wealth of information about respiratory patients worldwide"

04

Structure and Content

To meet the requirements of each student, a syllabus has been designed to cover the most important points of Big Data in Pulmonology, thus meeting the requirements set by the teaching team. Thus, there are three modules where basic aspects of the program and its relationship with Pulmonology, Precision Medicine and different Respiratory Diseases will be discussed. From the very first moment the student will notice the extensive work of the professional team behind the syllabus to develop the skills in a dynamic and practical way.

Reach your professional goals by following a program developed by a group of experts with extensive experience in the field of Pulmonology".

Module 1. Precision Personalized Medicine and Big Data in Pulmonology prelude.

1.1. Ethics of Precision Medicine
1.2. Advantages
  1.2.1. Disadvantages of Precision Medicine
1.3. Precision Medicine as a strategy
1.4. The Big Data Revolution
1.5. Real-Life Studies
  1.5.1. Advantages
  1.5.2. Inconveniences
1.6. Pharmacogenomics
1.7. Proteomics
1.8. Chronicity
  1.8.1. Personalization of Care
1.9. Telemedicine
1.10. Personalized Care for Dependents.
  1.10.1. Role of Nursing

Module 2. Big Data and Respiratory Diseases I

2.1. Big Data and Epidemiology of Respiratory Diseases
2.2. Big Data and Bronchoscopy.
2.3. Big Data and Non-Invasive Mechanical Ventilation
2.4. Big Data and Invasive Mechanical Ventilation
2.5. Big Data and Tobacco Use.
2.6. Big Data and Air Pollution
2.7. Big Data and Asthma.
2.8. Big Data and EPOC.
2.9. Big Data and Sleep Apnea-Hypopnea Syndrome
2.10. Big Data and Hypoventilation-Obesity Syndrome.

Module 3. Big Data and Respiratory Diseases II

3.1. Big Data and Community Pneumonia
3.2. Big Data and Nosocomial Infection
3.3. Big Data and Tuberculosis
3.4. Big Data, Environmental Pollution and Respiratory Infection
3.5. Big Data and COVID-19
3.6. Big Data, Pleural Diseases, and Lung Cancer.
3.7. Big Data and Interstitial Lung Diseases
3.8. Big Data and Thromboembolic Disease
3.9. Big Data and Pulmonary Hypertension
3.10. Big Data and Neonatal-Onset Respiratory Diseases.

Designed by the best in this field of medicine, this comprehensive Big Data and Pulmonology program focuses on those important points to advance your career."

05

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

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

At TECH 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. 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, trying to recreate the real conditions in the physician's professional practice.

Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method"

The effectiveness of the method is justified by four fundamental achievements:

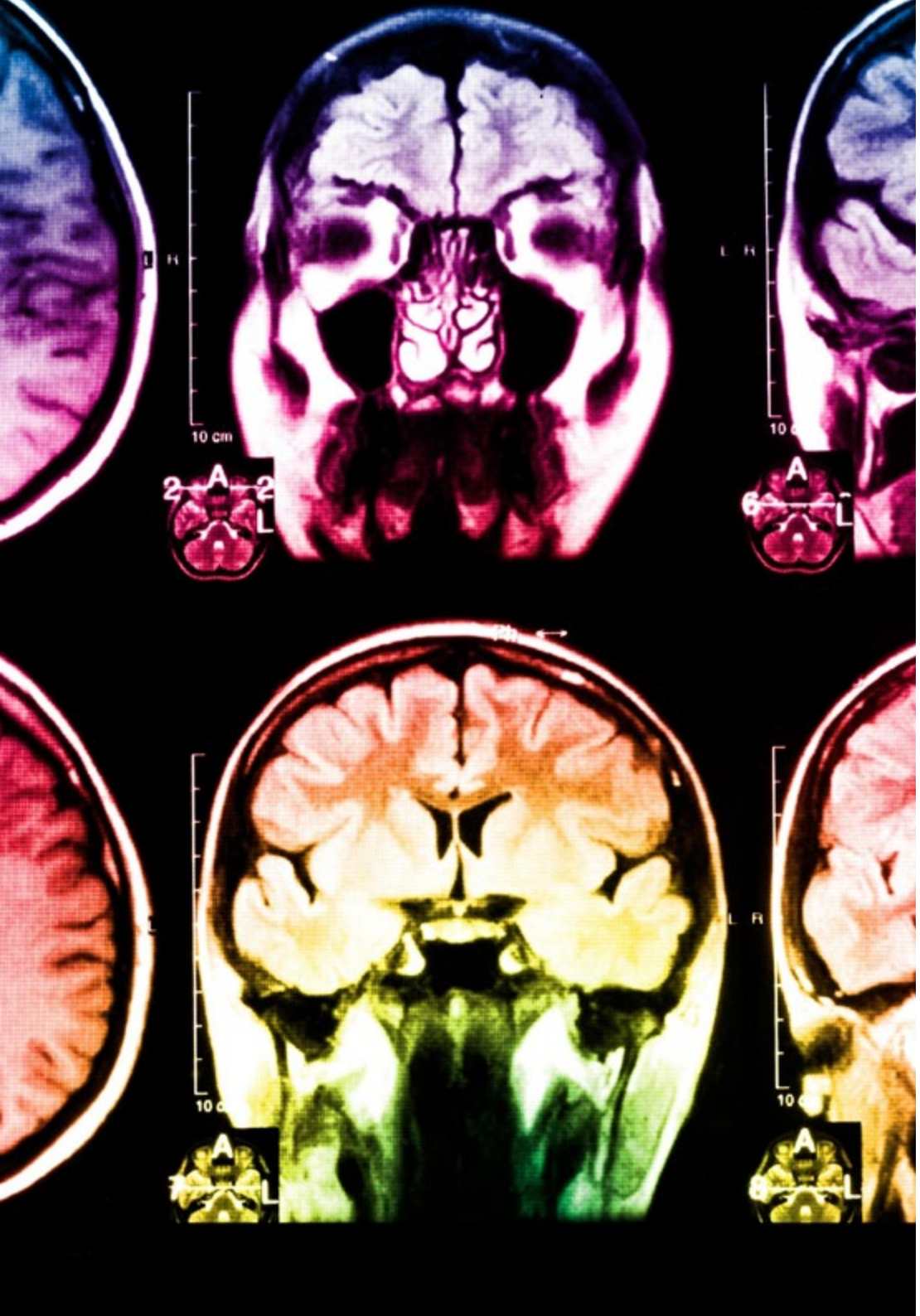
1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better 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.

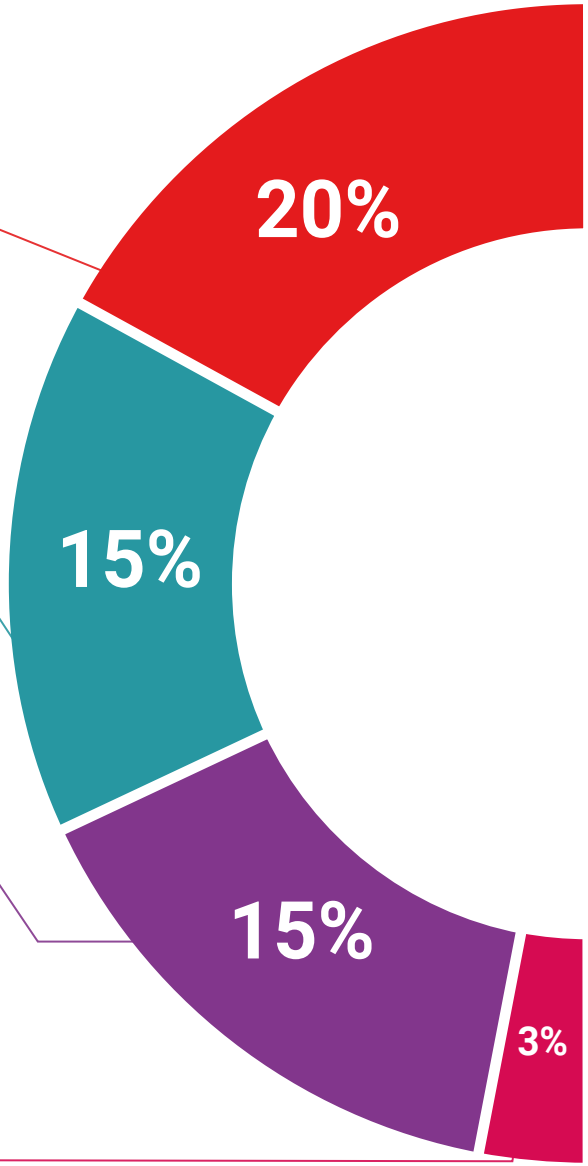
Interactive Summaries

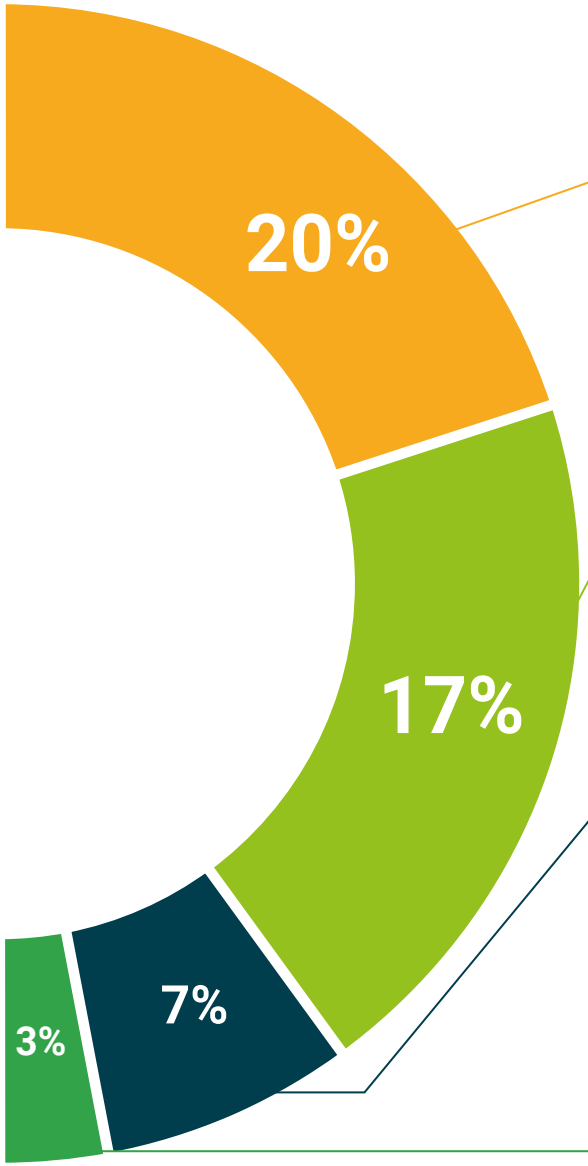
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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.





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 on the usefulness of learning by observing experts. The system known as 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 Diploma in Pulmonology Big Data guarantees STUDENTS, in addition to the most rigorous and up-to-date EDUCATION, access to a Postgraduate Diploma issued by TECH Global University.

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 Diploma in Big Data in Pulmonology** 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.

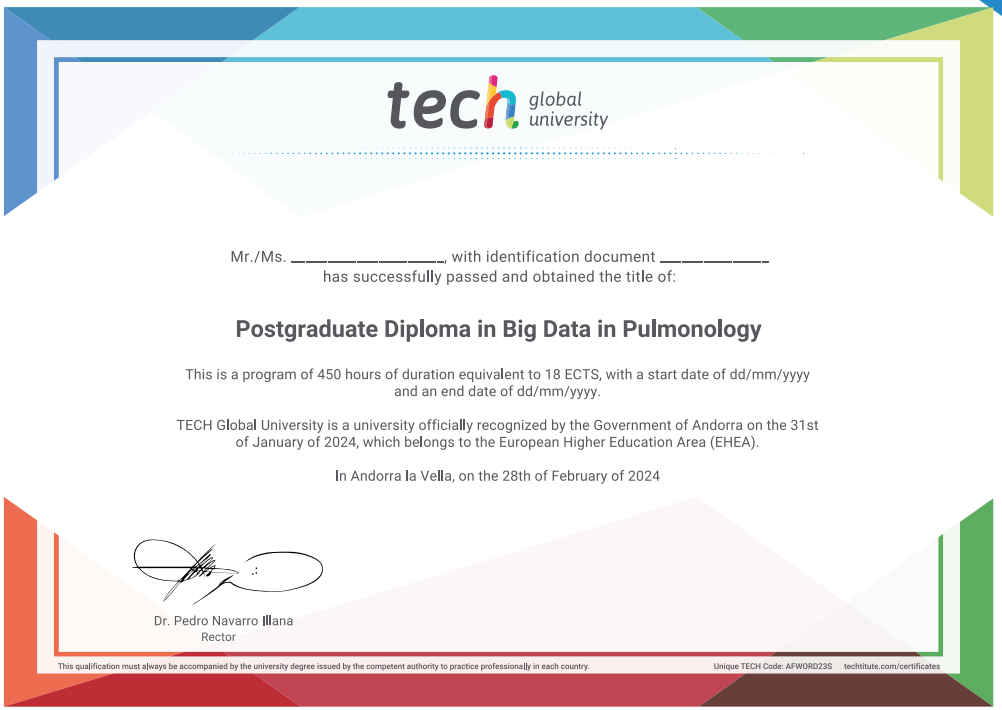
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Big Data in Pulmonology**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**


tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Diploma in Big Data in Pulmonology

This is a program of 450 hours of duration equivalent to 18 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

*Apostille Convention. In the event that the student wishes to have their paper Diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

health

people

teaching

community

innovation

knowledge

quality

languages

tech global university

Postgraduate Diploma

Big Data in Pulmonology

- Modality: **online**
- Duration: **6 months**
- Certificate: **TECH Global University**
- Credits: **18 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Postgraduate Diploma

Big Data in Pulmonology

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