

# Postgraduate Certificate

## Genetics, Precision Medicine and Lung Cancer





## Postgraduate Certificate Genetics, Precision Medicine And Lung Cancer

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

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

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# 01

# Introduction

Precision Medicine has become a new trend to develop treatments and diagnostics that are adapted to individuals and the alterations they present, making it possible to approach diseases from other angles. In this regard, for people suffering from lung cancer, this area of research has become the future, effectively predicting which patients are most likely to benefit from a specific treatment. Therefore, this program seeks to update the genetic basis of this disease and other aspects related to the treatment and diagnosis of a set of driver mutations.





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*Develops new skills in the field of Genetics,  
Precision Medicine and Lung Cancer to achieve a  
more accurate treatment of lung cancer patients”*

In many cases, cancer is usually treated in the same way. However, this is not feasible for many patients, as different genetic factors are involved, which can lead to different reactions. With the help of Precision Medicine and Genetics, certain characteristics of each tumor have been established, as well as the resistance that some people develop to treatments.

In an overview, this field of medicine is completely transforming the way different types of cancer are evaluated, helping physicians to characterize genetic alterations as the basis for better understanding disease triggers, having a more successful outcome with fewer side effects.

Based on the above, the Postgraduate Certificate in Genetics, Precision Medicine and Lung Cancer further expands the students' knowledge of the genetic basis of this disease, the driver mutations of which there are records and the therapeutic implications that have revolutionized this sector of medicine, since it focuses on the individuality of the patient and is not a collective.

By the end of the Postgraduate Certificate, the student will develop the necessary skills to know the different treatments according to a particular population and the contribution that these have had in the development of other methods to eliminate the disease. All this, with the support of a highly qualified teaching staff in this field of medicine and with a program that provides the facility to study 100% online, having at hand a device with internet connection.

The educational program in this **Postgraduate Certificate in Genetics, Precision Medicine and Lung Cancer** has been updated and approved by a group of experts, being one of the most complete in the market. In this way, it stands out for the following characteristics:

- The development of case studies presented by experts in Genetics, Precision Medicine and Lung Cancer
- 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



*Develop new skills by learning about the different treatments focused on the individuality of lung cancer patients and not on the disease"*

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*Patients may react in different ways to traditional treatments and drugs, which is why Precision Medicine is important to ensure their full recovery”*

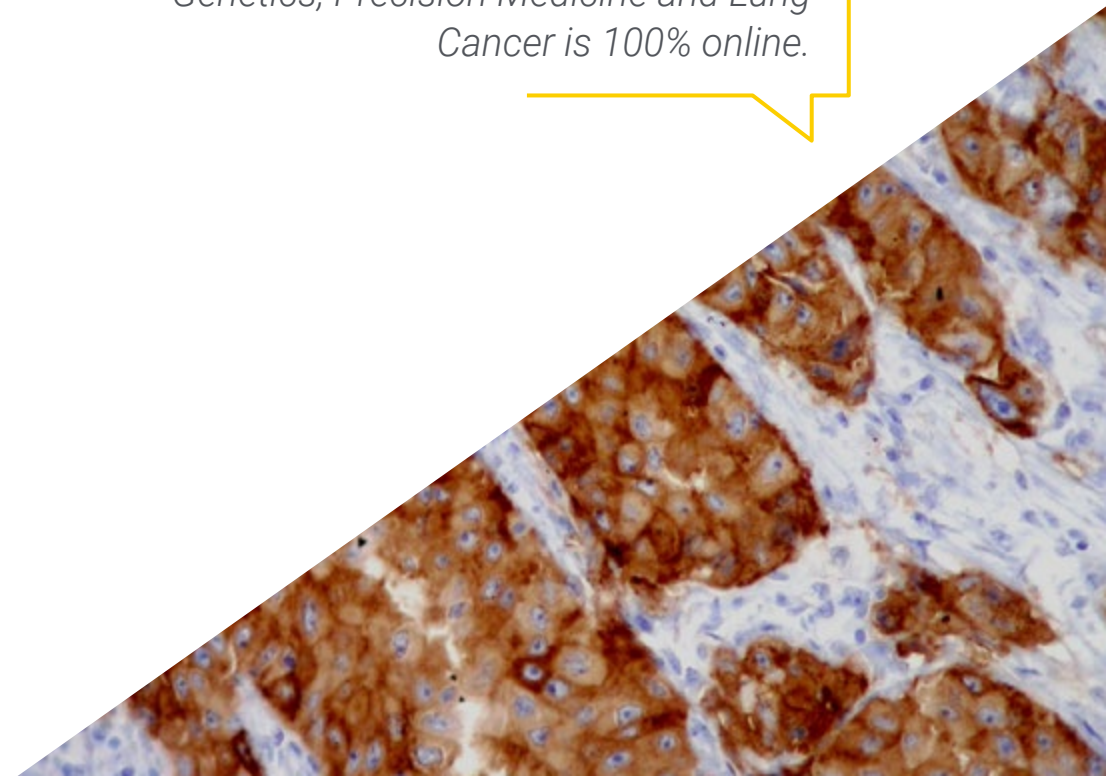
The program's teaching staff includes professionals from the sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

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. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts.

*Learn from the best in the field of Genetics and Precision Medicine with a theoretical and practical program.*

*Don't interrupt your work activities to attend a class, the Postgraduate Certificate in Genetics, Precision Medicine and Lung Cancer is 100% online.*



# 02 Objectives

The design of this Postgraduate Certificate in Genetics, Precision Medicine and Lung Cancer seeks to provide students with the ability to analyze, understand and acquire the necessary knowledge to improve in their professional area. All the knowledge contained in the Postgraduate Certificate module is carefully thought out by a professional team whose mission is to boost students' careers through their extensive work and professional experience. To this end, TECH establishes a series of general and specific objectives for the greater satisfaction of the future graduate, those being the following:







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*Recognize genetic links to cancer  
and develop a better assessment of  
the condition of your future patients”*



## General Objectives

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- Provide in-depth knowledge on the genetic linkage of respiratory diseases
- 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





## Specific Objectives

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- ◆ Studying the genetic susceptibility of lung cancer in more depth
- ◆ Further exploring driver gene mutations with approved lung cancer treatments
- ◆ Know future treatments against therapeutic targets
- ◆ Master the state of the art of lung cancer treatment with respect to the contribution of treatments based on genetic therapeutic targets

*Students in this Postgraduate Certificate will have the ability to analyze, understand and improve the treatment of their patients.*



03

# Course Management

The content of this program has been designed based on the need to meet the high standards of the market. For this reason, TECH has a highly qualified faculty with extensive work and research experience in the field of Genetics, Precision Medicine and Lung Cancer. For this reason, they accompany the student at all times and provide the necessary tools for the development of their capabilities. In this way, the professional has the guarantees required to specialize at an international level in a booming sector that will catapult him/her to professional success.





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*With a highly qualified professional team that offers its work experience for the development of students in this field of medicine"*

## Management



### Dr. Puente Maestu, Luis

- ◆ Professor of Pneumology, Department of Medicine, Universidad Complutense de Madrid.
- ◆ Chief of the Pneumology Department of the Hospital General Universitario Gregorio Marañón
- ◆ Degree in Medicine from the Complutense University of Madrid.
- ◆ Specialist in Pneumology, Complutense University of 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



## Professors

### Dr. De Miguel Díez, Javier

- ◆ Section Chief and Resident Tutor in the Pneumology 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

### Mr. Calles Blanco, Antonio

- ◆ Regional Ministry of Health in the Department of Medical Oncology, Madrid
- ◆ Care, teaching and research work at the Hospital General Universitario Gregorio Marañón in Madrid
- ◆ Resident tutor and collaborating medical teacher in External Medical Practice Teaching at the Complutense University of Madrid
- ◆ Specialist in Medical Oncology at the Hospital Clínico San Carlos, Madrid
- ◆ Degree in Medicine and Surgery from the Universidad Autónoma de Madrid

# 04

## Structure and Content

The content structure for this Postgraduate Certificate in Genetics, Precision Medicine and Lung Cancer has been established in a curriculum whose modules offer a broad perspective of this area of medicine, from a global point of view, with the motivation to encourage its application at an international level, incorporating all the fields of work involved in the development of its functions, both public and private. With this Postgraduate Certificate, the professional will see his or her knowledge broadened, which will enable him or her to develop professionally, knowing that he or she can count on the support of a team of experts.





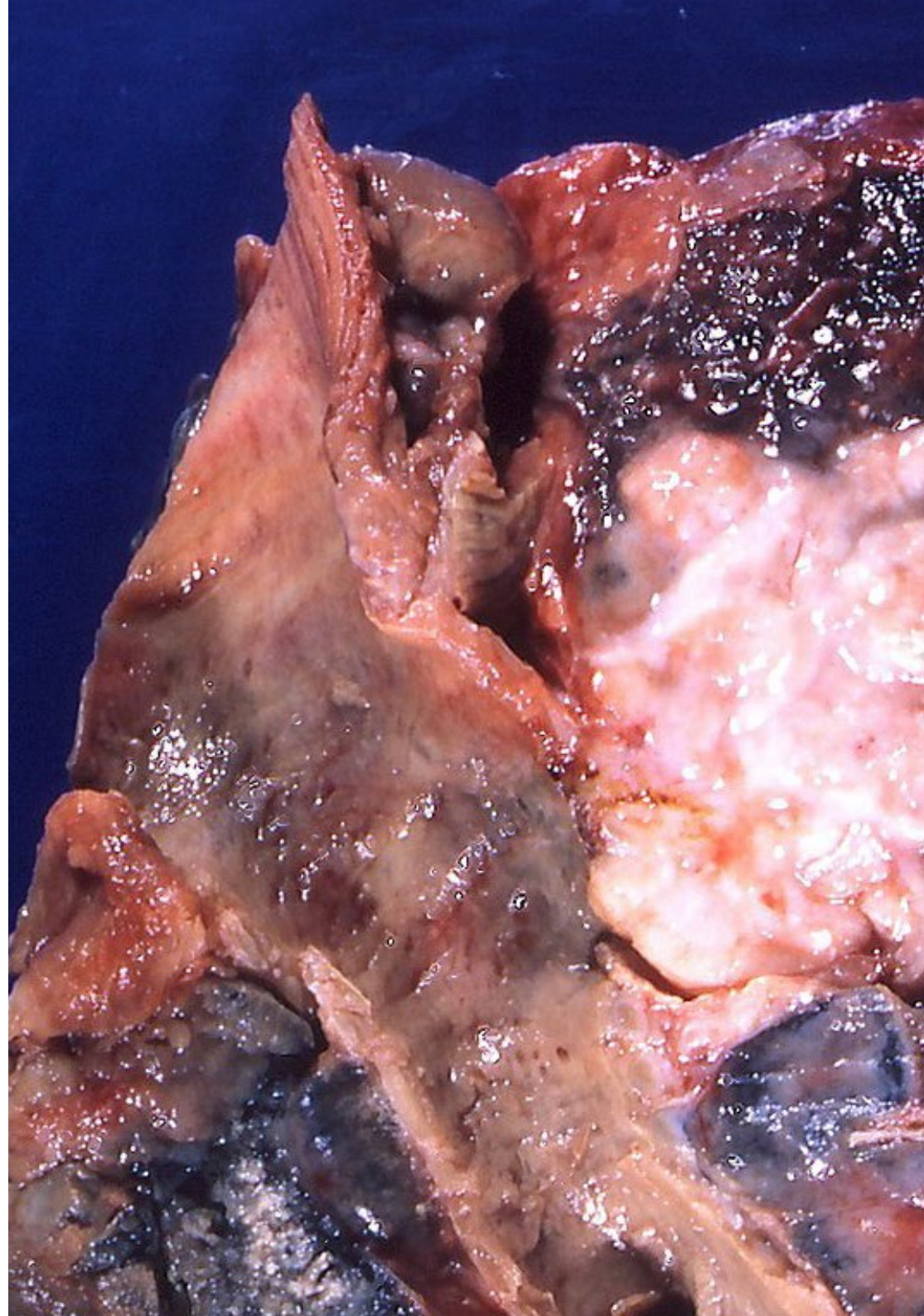


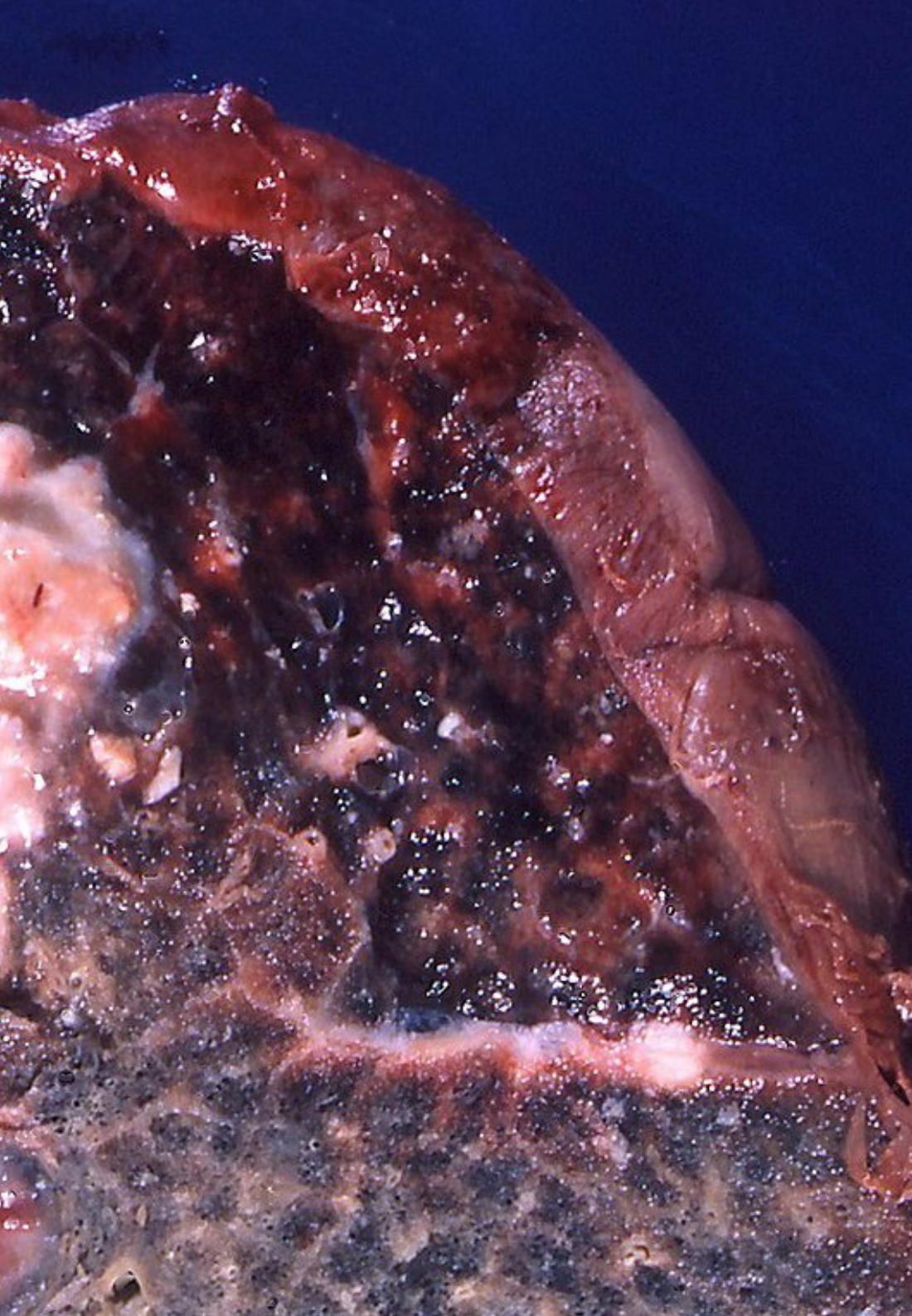
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*With a curriculum updated to market demands, this Postgraduate Certificate in Genetics, Precision Medicine and Lung Cancer seeks to broaden the knowledge of its students"*

## Module 1. Genetics, Precision Medicine and Lung Cancer

- 1.1. The Genetics of Lung Cancer Susceptibility
  - 1.1.1. Implications for Treatment
- 1.2. Molecular Biology of Adenocarcinoma of the Lung
  - 1.2.1. Conductive Mutations
- 1.3. Molecular Biology of Squamous Cell Carcinoma of the Lung
  - 1.3.1. Sarcomatoid Carcinoma of the Lung
- 1.4. Molecular Biology of Microcytic Carcinoma of the Lung
- 1.5. Genomic Platforms for Lung Cancer Molecular Diagnostics and Liquid Biopsy
- 1.6. Conductive Mutations as Therapeutic Targets
  - 1.6.1. EGFR Mutations
- 1.7. Conductive Mutations as Therapeutic Targets
  - 1.7.1. ALK Translocations
- 1.8. Conductive Mutations as Therapeutic Targets
  - 1.8.1. Others (ROS1, MET, RET, BRAF, NTRK)
- 1.9. Treatments Against Therapeutic Targets Under Investigation
  - 1.9.1. HER2, NRG1 and KRAS
- 1.10. Precision Medicine in Lung Cancer
  - 1.10.1. Global Lung Cancer Management Strategy Linked to Therapeutic Targets





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*A Program Designed to Improve  
Your Skills in Genetics and  
Precision Medicine”*

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. 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.

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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

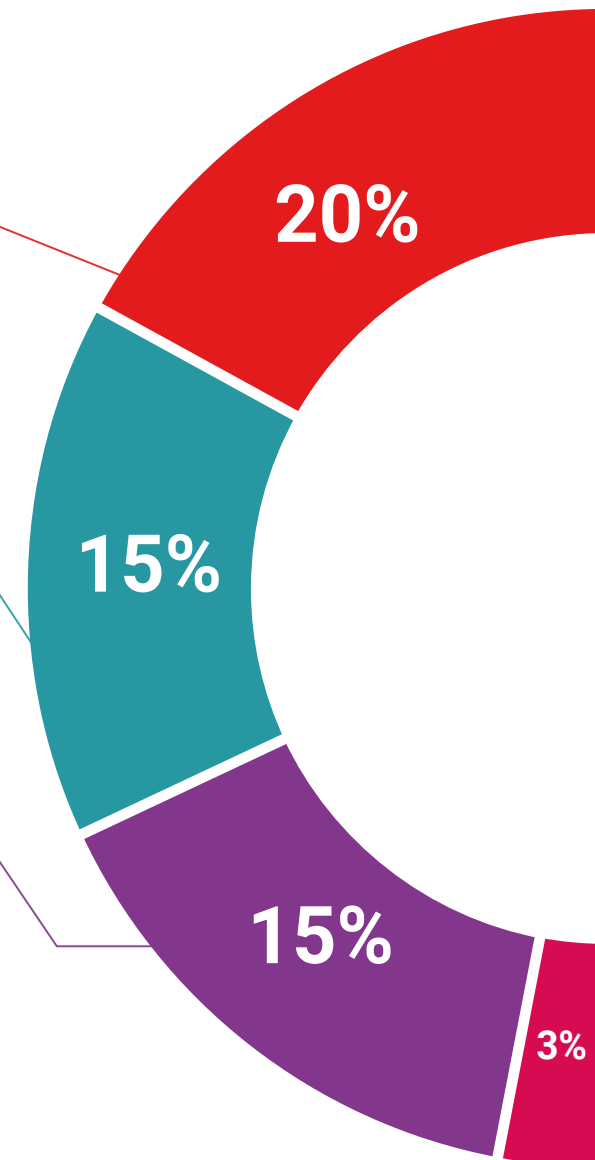
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

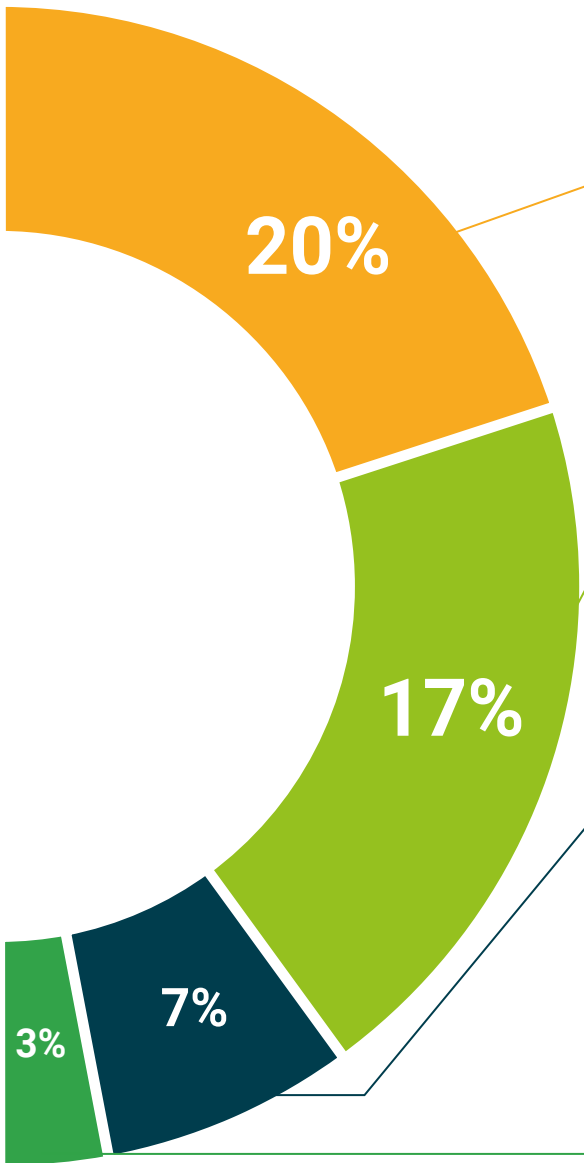
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### 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.





#### 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 Certificate in Genetics, Precision Medicine and Lung Cancer guarantees you, in addition to the most rigorous and up-to-date training, access to a Postgraduate Certificate issued by TECH Technological University.



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*Successfully complete this training and receive your university degree without travel or laborious paperwork"*

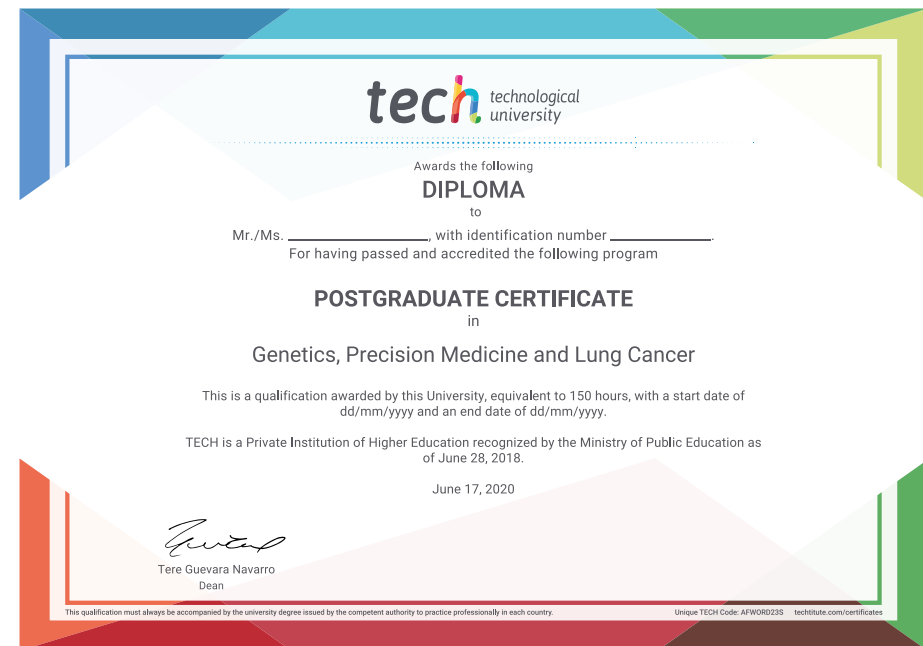
This **Postgraduate Certificate in Genetics, Precision Medicine and Lung Cancer** contains the most complete and up-to-date scientific program on the market.

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

The diploma issued by **TECH Technological University** will reflect the qualification obtained in the **Postgraduate Certificate**, and meets the requirements commonly demanded by labor exchanges, competitive examinations and professional career evaluation committees.

Title: **Postgraduate Certificate in Genetics, Precision Medicine and Lung Cancer**

Official N° of Hours: **150 hours**.



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

health future  
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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