

# Postgraduate Diploma

Screening, Molecular Biology  
and Staging of Thoracic Cancer





## Postgraduate Diploma

### Screening, Molecular Biology and Staging of Thoracic Cancer

Course Modality: **Online**

Duration: **6 months**

Certificate: **TECH Technological University**

Official N° of Hours: **500 h.**

Website: [www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-screening-molecular-biology-staging-thoracic-cancer](http://www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-screening-molecular-biology-staging-thoracic-cancer)

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01

# Introduction

Lung cancer is a major health problem. In developed countries, it is the cancer with the highest mortality rate in men, while in women it is the fourth most frequent cancer and the second in terms of mortality.





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*Nowadays, molecular biology is key in the diagnosis and treatment of cancer, and has gone from being a field of research to an essential tool in the management of oncology patients"*

Recent studies have reported a reduction in lung cancer mortality among current and former smokers with a minimum of 30 packs/year following the use of low-dose helical computed tomography, and have provided sufficient evidence to establish strong international recommendations for lung cancer prevention. Therefore, a more frequent future presentation of lung cancer will be via a solitary pulmonary nodule, a relevant fact given that diagnosis at advanced stages has been the norm in the last 30 years and the reason for the low prevalence of this disease.

On the other hand, the anti-smoking policies that have been implemented in the last decade are changing the profile of the patient who is usually seen in the office, and although it is not yet very evident, it will become more evident in the coming years.

Therefore, this program contains key and relevant topics for the near future in this field, such as lung cancer screening programs.

Nowadays, talking about oncology means talking about "multidisciplinary teams", about advances in fields of science that are increasingly involved, and this, apart from being interesting, means that we need continuous training that is often difficult to acquire in other training courses or congresses since they are oriented to a very specific area and specific to a single specialty. Not losing this multidisciplinary vision is very important because many advances in one area can have implications in the diagnostic and therapeutic algorithms used in oncology. In fact, one of the skills that we aim for the students to achieve with this program is to have a broad and clear vision of oncology, and to use the comparison of scientific advances in each area as a tool that will allow them to advance in their knowledge.

This **Postgraduate Diploma in Screening, Molecular Biology and Staging of Thoracic Cancer** contains the most complete and up-to-date scientific program on the market.

The most important features include:

- Clinical practical cases presented by experts in the different specialties
- 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
- New developments in Screening, Molecular Biology and Staging of Thoracic Cancer
- An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course
- With special emphasis on evidence-based medicine and research methodologies in Screening, Molecular Biology and Staging of Thoracic Cancer
- All of this will be complemented by 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



*Expand your knowledge through the Postgraduate Diploma in Screening, Molecular Biology and Staging of Thoracic Cancer, in a practical way and adapted to your needs"*

“

*This Postgraduate Diploma is the best investment you can make when selecting a refresher program, for two reasons: in addition to updating your knowledge in Screening, Molecular Biology and Staging of Thoracic Cancer, you will obtain a qualification endorsed by TECH Technological University”*

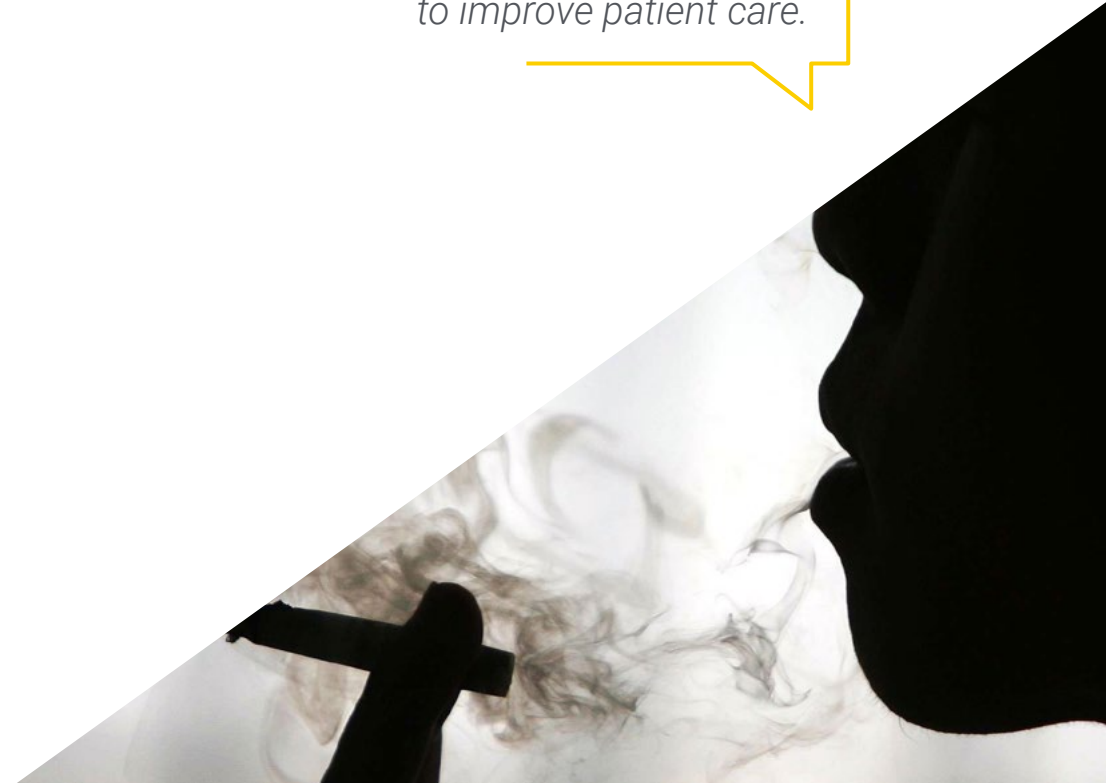
Its teaching staff includes health professionals belonging to the field of thoracic oncology, who contribute their work experience to this program, in addition to renowned specialists belonging to leading scientific societies.

Thanks to its multimedia content developed with the latest educational technology, they will allow the professionals a situated and contextual learning, that is to say, a simulated environment that will provide an immersive learning programmed to train in real 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 course. For this reason, they will be assisted by an innovative, interactive video system created by renowned and experienced experts in the field of thoracic oncology who have extensive teaching experience.

*Increase your decision-making confidence by updating your knowledge with this Postgraduate Diploma in Screening, Molecular Biology and Staging of Thoracic Cancer.*

*Don't miss the opportunity to update your knowledge in Screening, Molecular Biology and Staging of Thoracic Cancer to improve patient care.*



02

# Objectives

The main objective of the program is the development of theoretical and practical learning, so that the physician can master in a practical and rigorous way the study of screening, molecular biology and staging of thoracic cancer.







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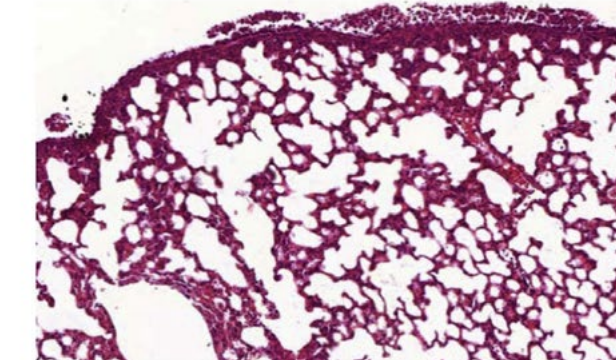
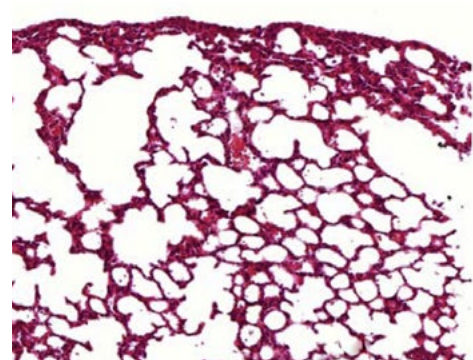
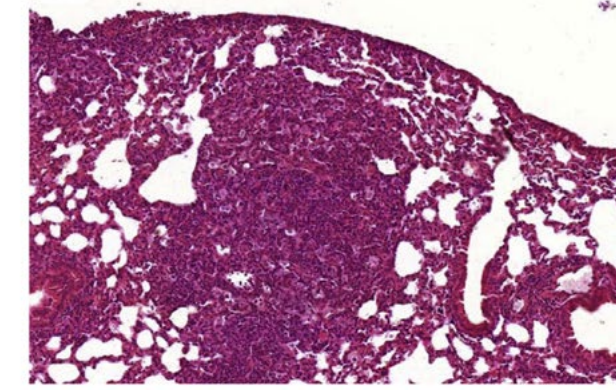
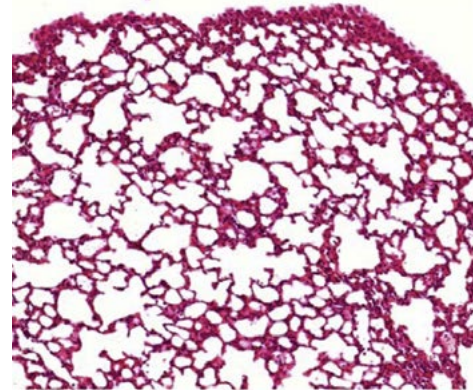
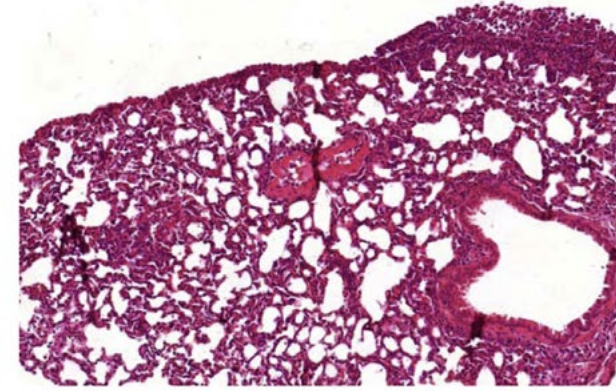
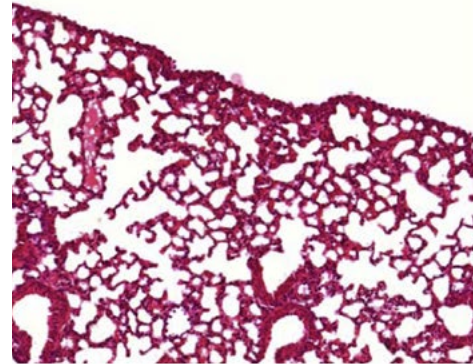
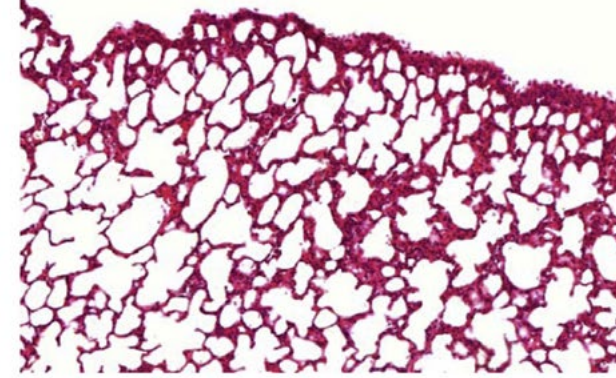
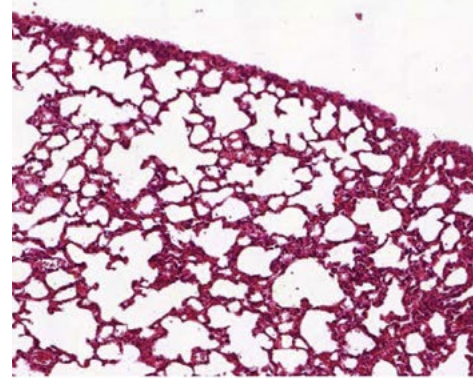
*This refresher program will generate a sense of confidence when practicing medicine and will help you grow both personally and professionally”*



## General Objective

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- To create a global and up-to-date vision of thoracic oncology and all its aspects, allowing the student to acquire useful knowledge and, at the same time, to generate interest in expanding the information and discovering its application in daily practice





## Specific Objectives

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### Module 1. Etiology, Prevention and Screening

- ♦ Analyze the effectiveness of different tests proposed for lung cancer screening: low-resolution helical computed tomography, chest radiography and sputum cytology in the early diagnosis of lung cancer
- ♦ Define the potential of other screening tests and estimate the population susceptible to be screened for lung cancer
- ♦ Update knowledge in the molecular biology of cancer, especially in relation to the concept of genetic heterogeneity, circulating biomarkers and tissue molecular markers

### Module 2. Translational Oncology

- ♦ Provide and expand knowledge on immunotherapy, as an example of a clear scientific advance in translational research, and one of the most promising lines of research in cancer treatment
- ♦ Create a global and updated vision of the exposed topics that will allow the student to acquire useful knowledge and at the same time, generate interest in expanding the information and discovering its application in their daily practice
- ♦ Define the potential of other screening tests and estimate the population susceptible to be screened for lung cancer

### Module 3. Diagnosis and Staging

- ♦ Review the performance and usefulness of each of the tests used in the diagnosis of thoracic tumors
- ♦ Describe the usefulness and performance of PET/CT with F18-FDG in the diagnosis, staging, treatment control and monitoring of thoracic tumors
- ♦ Learn more about thoracic MRI since it provides very complete anatomical information that can be fundamental for the patient's treatment, in addition to a functional assessment, and on many occasions its tissue characterization
- ♦ Review of available diagnostic tests for the assessment of cardiopulmonary reserve, necessary for the identification of patients at high risk of developing perioperative complications and significant long-term functional limitation after resection surgery
- ♦ Review the changes proposed for the new edition of the TNM, which imply a more accurate tumor staging



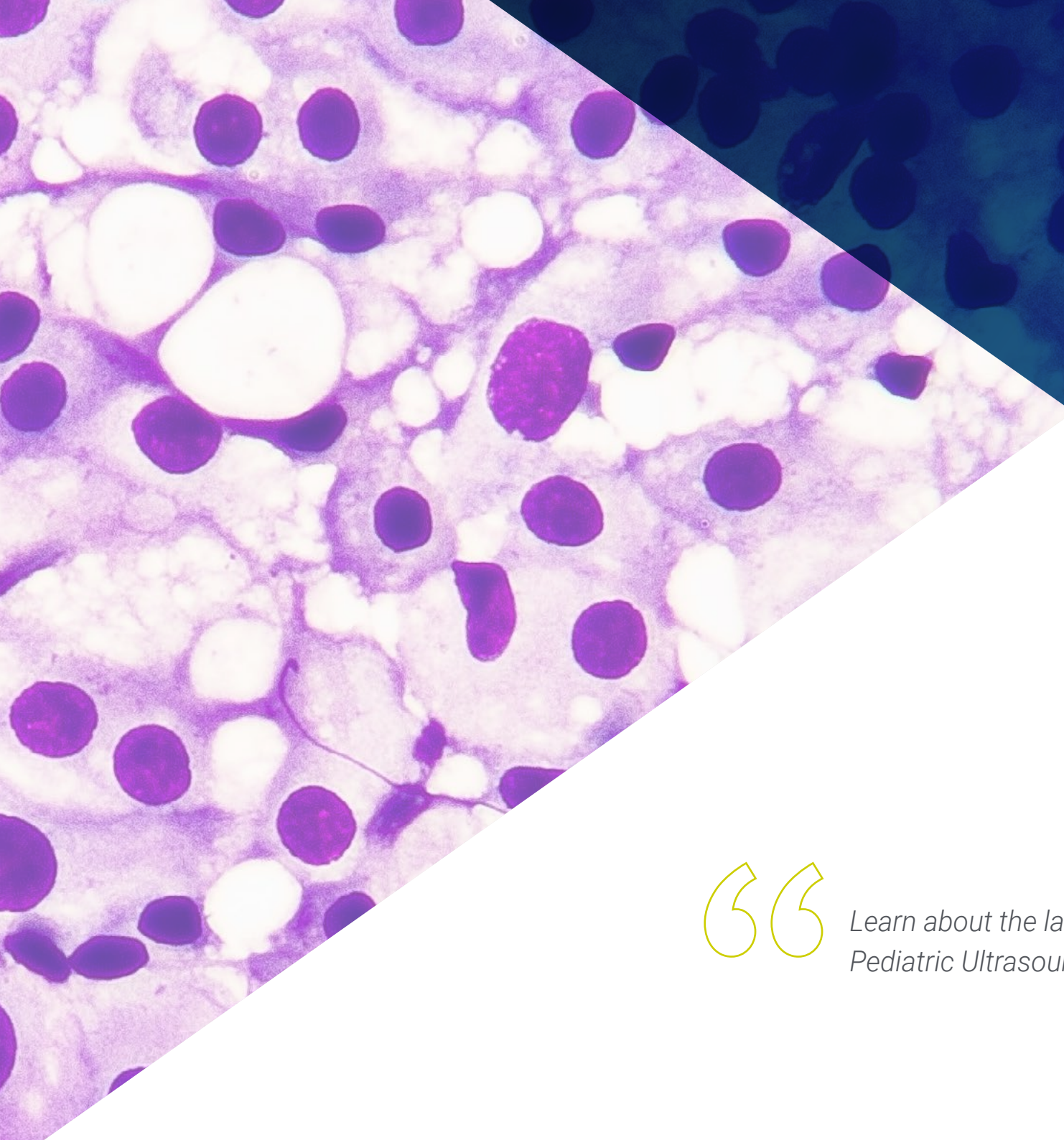
*Make the most of this opportunity and take the step to get up to date on the latest developments in Screening, Molecular Biology and Staging of Thoracic Cancer"*

03

# Course Management

This program includes in its teaching staff health professionals of recognized prestige, who belong to the field of thoracic oncology and who bring to this training the experience of their work. In addition, renowned specialists, members of prestigious national and international scientific communities, are involved in designing and preparing the program.





*Learn about the latest advances in Clinical Pediatric Ultrasound from leading professionals”*

## Management



### Dr. Oruezábal Moreno, Mauro Javier

- ♦ Head of the medical Oncology Service at La Paz University Hospital
- ♦ Research Fellow at University of Southampton
- ♦ Master's Degree in Bioinformatics and biostatistics UOC-UB
- ♦ Master's Degree in bioinformatic analysis by the Pablo de Olavide University
- ♦ Doctor of Medicine from the Complutense University of Madrid. Outstanding Cum Laude Qualification
- ♦ Member of the Spanish Society of Medical Oncology and GECP Group (Spanish Spanish Group of Lung)
- ♦ Specialist (MIR) in Medical Oncology, University Hospital San Carlos of Madrid
- ♦ Degree in Medicine and Surgery, University of Navarra



### Dr. Villar Álvarez, Felipe

- ♦ Associate Physician of Pulmonology, Jiménez Díaz Foundation University Hospital, Madrid
- ♦ Director of the Editorial Committee of the Respiratory Pathology Journal of Neumomadrid
- ♦ Researcher of the CIBER network of Respiratory Diseases (CIBERES) belonging to Group 04
- ♦ Member of the Madrid Society of Pulmonology and Thoracic Surgery (Neumomadrid), the Spanish Society of Pulmonology and Thoracic Surgery (SEPAR) and the European Respiratory Society (ERS)
- ♦ Master's Degree in Clinical Unit Management. Murcia University
- ♦ Doctor of Medicine from the Complutense University Madrid (2011). Outstanding Cum Laude Qualification. Best Doctoral Thesis Award in Pulmonology and Thoracic Surgery 2010-2011 by the Madrid Society of Pulmonology and Thoracic Surgery (Neumomadrid)
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- ♦ Secretary Integrated Research Project (IIP) Thoracic Oncology SEPAR
- ♦ Secretary Thoracic Oncology Area National Society of Pulmonology and Thoracic Surgery (SEPAR)
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- ♦ Head of IT
- ♦ Senior Engineer of Computer Science

**Dr. Olivas Varela, José Ángel**

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- ♦ University of Castilla La Mancha

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- ♦ Clinical University of Navarra, Resident

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- ♦ Specialist in General and Digestive System Surgery at the Fundación Alcorcón University Hospital
- ♦ Master's Degree in Clinical Management, Medical and Healthcare Administration at TECH Technological University
- ♦ Specialist Degree in Digital Teaching for Medicine from TECH Technological University
- ♦ Specialist Degree in Leadership and Management Skills in Health at CEU University
- ♦ Specialist Degree in Medical Quality Management in CEU University
- ♦ Spanish Association of Surgeons (AEC)
- ♦ Member of the Spanish Association of Coloproctology (AECOP)

# 04

## Structure and Content

The structure of the contents has been designed by a team of professionals knowledgeable about the implications of specializing in daily medical practice, aware of the relevance of current education to be able to act before the patient with thoracic oncologic pathology and committed to quality teaching through new educational technologies.



“

*This Postgraduate Diploma in Screening, Molecular Biology and Staging of Thoracic Cancer contains the most complete and up-to-date scientific program on the market”*

## Module 1. Etiology, Prevention and Screening

- 1.1. Risk Factors and Prevention
  - 1.1.1. Risk Factors
  - 1.1.2. Lung Cancer and Other Respiratory Diseases (COPD, OSAHS)
  - 1.1.3. Smoking Cessation
- 1.2. Solitary Pulmonary Nodule
  - 1.2.1. Definition and Etiology. Estimation of Malignancy
  - 1.2.2. Diagnostic Techniques in the Study of Solitary Pulmonary Nodules
  - 1.2.3. Sequential Evaluation. Management Algorithm
- 1.3. Screening
  - 1.3.1. Screening. Algorithm of Action
  - 1.3.2. Implementation of Screening in the Healthcare System

## Module 2. Translational Oncology

- 2.1. Molecular Biology
  - 2.1.1. Molecular Mechanisms of Cancer
  - 2.1.2. Tumor Immunology: Basis of Cancer Immunotherapy
  - 2.1.3. Microenvironment Reprogramming in Lung Cancer
- 2.2. Translational Oncology
  - 2.2.1. Understanding the New Technology: *Next Generation Sequence* (NGS) in Clinical Practice
  - 2.2.2. Therapeutic Targets in NSCLC
  - 2.2.3. Liquid Biopsies in NSCLC: The Future Is Here
  - 2.2.4. Role of the Biobank in Clinical Research



### Module 3. Diagnosis and Staging

- 3.1. Clinical Diagnosis. Serum Markers
  - 3.1.1. Clinical Diagnosis
  - 3.1.2. Paraneoplastic Syndromes
  - 3.1.3. Serum Markers
- 3.2. Imaging Techniques
  - 3.2.1. Chest X-ray
  - 3.2.2. Computed Tomography (CT)
  - 3.2.3. Thoracic Ultrasound Scan
  - 3.2.4. Magnetic Resonance Imaging (MRI) in the Assessment of Thoracic Tumors
  - 3.2.5. Positron Emission Tomography (PET)
- 3.3. Cytohistological Studies
  - 3.3.1. Classification and Anatomopathological Study
  - 3.3.2. Non-Invasive Methods: Sputum Cytology
  - 3.3.3. Non-Surgical Invasive Bronchoscopic Techniques: Standard Bronchoscopy, Ultrasound (EBUS-EUS), Electromagnetic Navigation and Others.
  - 3.3.4. Transthoracic Non-Surgical Invasive Techniques: FNP, CNB, Thoracentesis and Pleural Biopsy
  - 3.3.5. The Role of the Interventional Pathologist in the Diagnosis of Advanced Stage Lung Cancer
  - 3.3.6. Invasive Staging in Lung Cancer
- 3.4. Functional and Staging Assessment
  - 3.4.1. Preoperative Study of Surgical Risk
  - 3.4.2. The Eighth Edition of TNM Classification of Lung Cancer



*A unique, key, and decisive training experience to boost your professional development"*

# 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.



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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 Diploma in Screening, Molecular Biology and Staging of Thoracic Cancer guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.



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*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”*

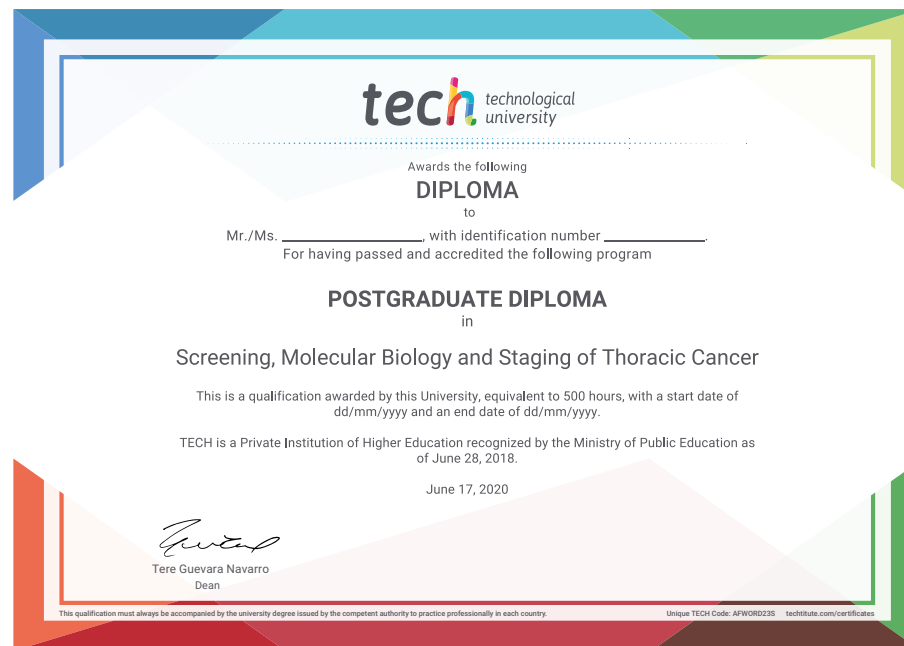
This **Postgraduate Diploma in Screening, Molecular Biology and Staging of Thoracic Cancer** contains the most complete and up-to-date scientific program on the market.

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

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

Title: **Postgraduate Diploma in Screening, Molecular Biology and Staging of Thoracic Cancer**

Official N° of Hours: **500 h.**



\*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.



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



## Postgraduate Diploma

Screening, Molecular  
Biology and Staging  
of Thoracic Cancer

Course Modality: **Online**

Duration: **6 months**

Certificate: **TECH Technological University**

Official N° of Hours: **500 h.**

# Postgraduate Diploma

## Screening, Molecular Biology and Staging of Thoracic Cancer