

# Postgraduate Diploma

## Non-Tuberculous Mycobacterial Infections





## Postgraduate Diploma Non-Tuberculous Mycobacterial Infections

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

Website: [www.techtitute.com/in/medicine/postgraduate-diploma/postgraduate-diploma-non-tuberculous-mycobacterial-infections](http://www.techtitute.com/in/medicine/postgraduate-diploma/postgraduate-diploma-non-tuberculous-mycobacterial-infections)

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# 01

# Introduction

Infectious diseases continue to be a challenge for scientists and healthcare professionals around the world. Progress in recent decades, especially with tuberculosis, has led to progress in its eradication and treatment in different patients. However, all mycobacteria not included in the tuberculosis and leprosy complex have their own problems and viable therapeutic options. This 100% online program provides students with a renewed understanding of recent advances in these diseases and their evolution. Multimedia content and simulations of real cases will be key tools in this teaching with an eminently practical approach.



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*Renew your knowledge on the most common infectious diseases in the world such as *Mycobacterium ulcerans*”*

This Postgraduate Diploma is oriented to medical professionals specialized in infectious diseases, who seek to expand and update knowledge in this field and incorporate it to the usual clinical practice, either from the point of view of diagnosis, treatment or prevention.

Over time, the grouping of mycobacteria not included in the tuberculosis and leprosy complexes has been referred to by different names. Nowadays, these should be individualized and named according to their scientifically accepted binomial name. In this Postgraduate Diploma, students will learn about their microbiological characteristics, the main clinical pictures and the different therapeutic options available for the Mycobacterium avium complex and non-tuberculosis mycobacteria such as *M. kansasii*, *M. xenopi*, *M. scrofulaceum*, *M. haemophilum*, *M. ulcerans*, *M. goodii* and *M. goodii*.

Likewise, during the 6 months of this online degree, the healthcare professional will deal with the different clinical pictures of other non-tuberculous mycobacteria such as *M. abscessus*, *M. chelonae*, *M. malmoense* or *M. simiae* for which the highly qualified teaching team with extensive experience in this area will provide the latest studies carried out in this area.

In addition, and despite the fact that leprosy currently has a lower incidence compared to tuberculosis, its presence in much of the world makes necessary the renewal of knowledge in this field by health personnel. In this sense, the Postgraduate Diploma will address the evolution of the disease and the prevention and control measures.

The course is taught entirely online, providing students with the opportunity to keep abreast of the latest developments in infectious diseases with multimedia content at the forefront of academia and with a learning system, Relearning, which will allow healthcare professionals to update all their knowledge in a simple and agile way.

This **Postgraduate Diploma in Non-Tuberculous Mycobacterial Infections** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ The development of practical cases presented by experts in Medicine and Microbiology
- ♦ 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 self-assessment can be used to improve learning
- ♦ 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



*Acquaint yourself in detail with this Postgraduate Diploma on the latest treatments used in HIV patients and apply the best strategies"*

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*The multimedia content of this degree will guide you through the latest studies on fast-growing mycobacteria, a common water pollutant"*

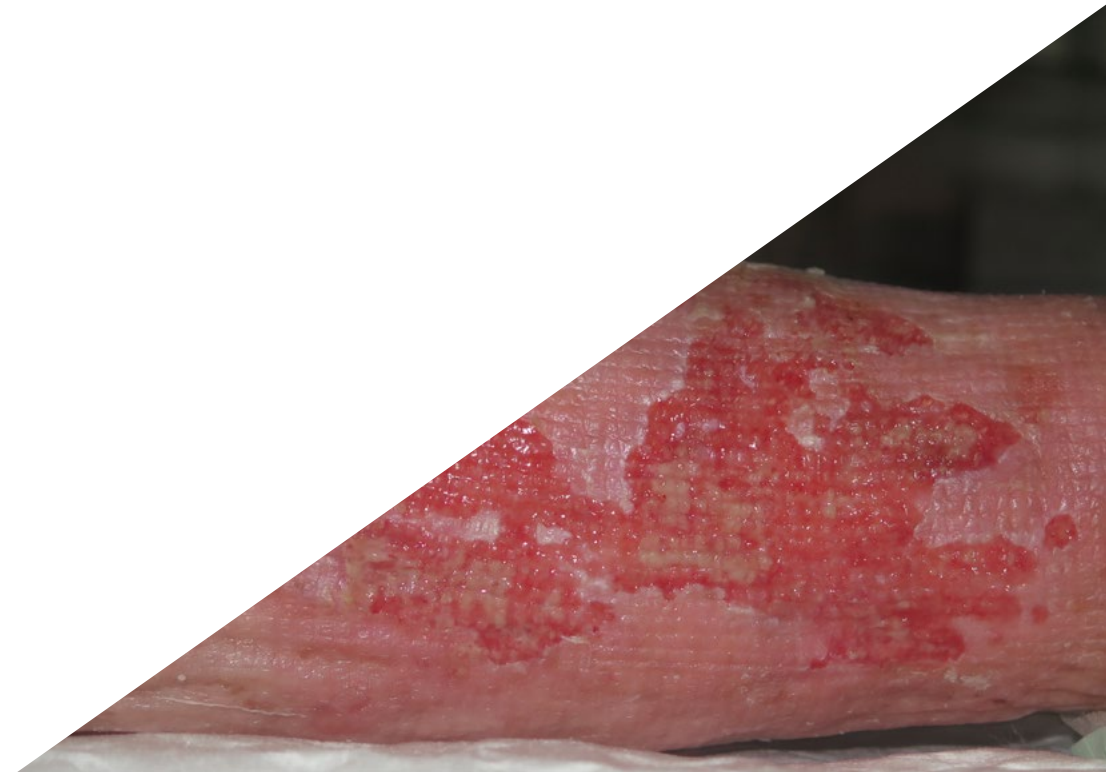
*Learn more about the new diagnostic techniques used to treat elderly or immunocompromised patients.*

*Renew your knowledge with a team of highly qualified specialists in infectious diseases.*

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

Its multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive education programmed to learn in real situations.

The design of this program focuses on Problem-Based Learning, by means of which the professional must try to solve the different professional practice situations that are presented throughout the academic course. For this purpose, the student will be assisted by an innovative interactive video system created by renowned experts.



# 02

## Objectives

The specialized teaching team of this 100% online degree provides students with all their knowledge in this field so that by the end of the course they will have acquired a broad knowledge of the latest research on non-tuberculous mycobacterial infections, their correct treatment, as well as the current problems of leprosy in different parts of the world. The simulation of real cases will provide the health professional with a more realistic and authentic vision to take all this knowledge to their daily practice.







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*Delve into the comprehensive management of infections caused by *M. abscessus*, *M. chelonae* and *M. goodii* in this 100% online teaching”*



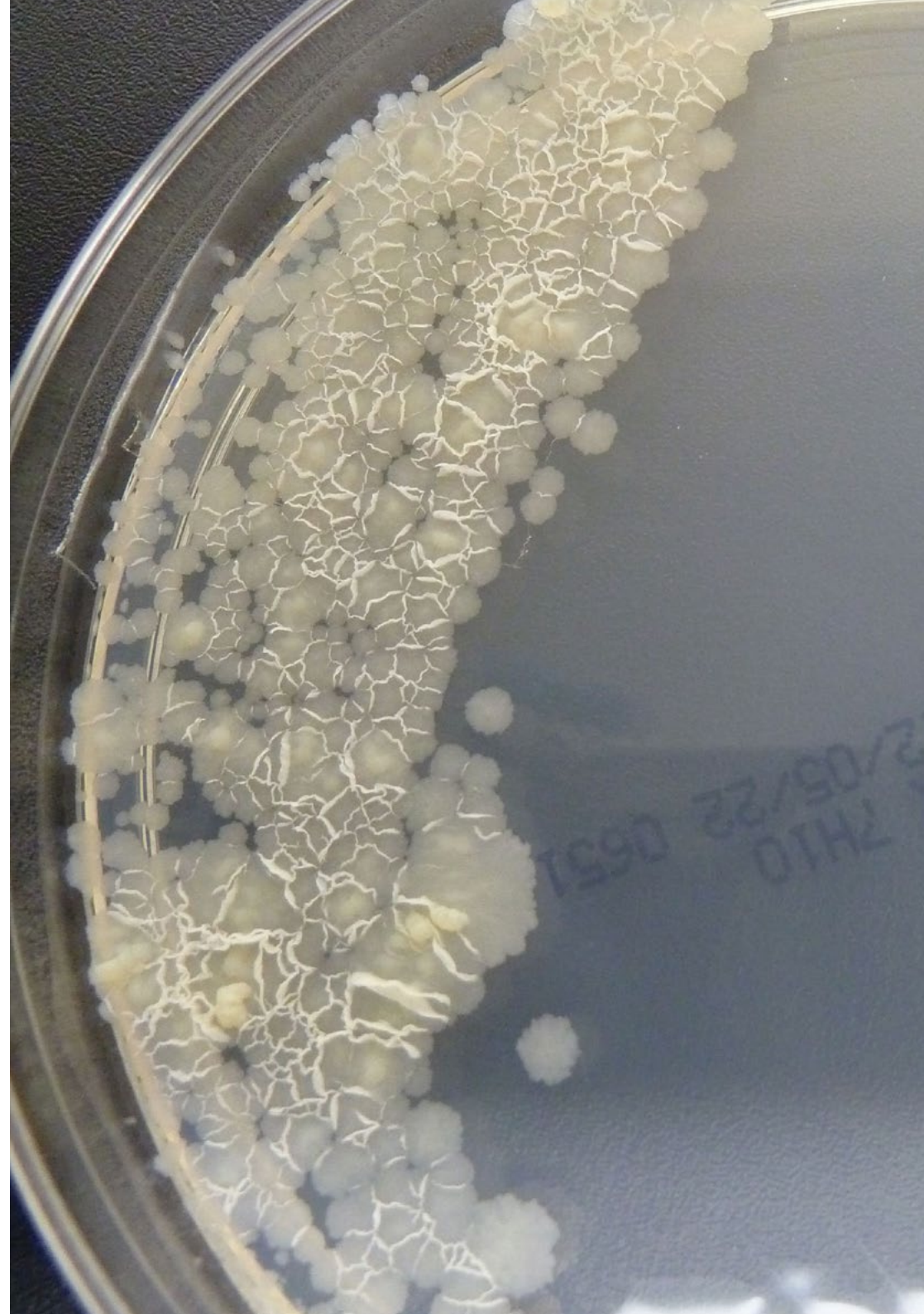
## General Objectives

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- In-depth study and update on infections caused by mycobacteria
- Have a broad body of knowledge of the available diagnostic methods and perform a detailed study of the drugs used in treatment, so as to optimize diagnoses and establish the most effective treatment guidelines with less adverse effects
- Comprehensively approach and manage both pulmonary and extrapulmonary clinical pictures caused by Mycobacterium tuberculosis complex, so they know how to recognize, diagnose and treat this type of infections
- Define and recognize the clinical, microbiological, diagnostic and therapeutic characteristics of infections caused by an important number of non-tuberculous mycobacteria



*The simulations of simulated real cases proposed by the specialized faculty will be very useful in your daily clinical practice"*





## Specific Objectives

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### Module 1. Infections by Non-Tuberculous Mycobacteria

- ◆ Become familiar with the evolution and current problems of infections caused by non-tuberculous mycobacteria
- ◆ Learn the microbiological characteristics, clinical picture and treatment of infections caused by *M. avium* complex, *M. kansasii*, *M. ulcerans*, *M. genavense*, *M. haemophilum*, *M. marinum*, *M. scrofulaceum* and *M. goodii*

### Module 2. Others Infections by Non-Tuberculous Mycobacteria

- ◆ Become deeply familiar with the evolution and current problems of infections caused by non-tuberculous mycobacteria
- ◆ Learn the microbiological characteristics, clinical picture and treatment of infections caused by *M. abscessus*, *M. chelonae*, *M. fortuitum* complex, *M. malmoense*, *M. simiae*, *M. szulgai*, *M. xenopi* and other non-tuberculous mycobacteria

### Module 3. Leprosy

- ◆ Become familiar with the evolution and current problems of infections caused by the *Mycobacterium* *Leprae* complex
- ◆ Delve into the reservoirs and the different routes of transmission of this pathology, as well as the etiopathogenesis and epidemiology
- ◆ Learn the different clinical classifications of the disease and its anatomopathological study
- ◆ In-depth knowledge of the diagnostic techniques and treatment of this infection including the development of resistance

03

# Course Management

TECH has incorporated in this online program a highly qualified teaching team in the area of Microbiology and Infectious Diseases. Their professional experience in this field in reference hospitals is a guarantee of updated and practical knowledge for the students. Likewise, the didactic material with video summaries of each topic and essential readings allow the health professional an even more complete update in this type of diseases.





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*A team of experts in Microbiology  
will be guiding you to update all your  
knowledge in infectious diseases"*

## Management



### Dr. Sánchez Romero, María Isabel

- Area Specialist in the Microbiology Department of the Puerta de Hierro Majadahonda University Hospital, Madrid
- PhD in Medicine and Surgery from the University of Salamanca
- Medical Specialist in Clinical Microbiology and Parasitology
- Member of the Spanish Society of Infectious Diseases and Clinical Microbiology
- Technical Secretary of the Madrid Society of Clinical Microbiology

## Professors

### Dr. Molina Esteban, Laura María

- Microbiology Specialist
- Area Specialist in the Microbiology Department Fuenlabrada University Hospital of Madrid
- Doctorate, Complutense University of Madrid
- Degree in Medicine and Surgery. Complutense University of Madrid
- Member of the Spanish Association of Medical Biopathology (A.E.B.M.)

### Dr. Portero Azorín, María Francisca

- Acting Head of the Microbiology Service at the Puerta de Hierro Majadahonda University Hospital
- Specialist in Microbiology and Clinical Parasitology at the Puerta de Hierro University Hospital
- Doctorate in Medicine from the Autonomous University Madrid
- Postgraduate in Clinical Management by Gaspar Casal Foundation.
- Research stay at the Presbyterian Hospital of Pittsburg through a FISS scholarship

**Dr. García-Masedo Fernández, Sarela**

- ◆ Pharmacist Specialist in Clinical Microbiology and Parasitology
- ◆ Area Specialist in the Microbiology Department of the Puerta de Hierro Majadahonda University Hospital
- ◆ Resident Intern Pharmacist at the Microbiology and Parasitology Laboratory of the Puerta de Hierro University Hospital
- ◆ Pharmacist at the Sexta Avenida Pharmacy
- ◆ PhD in Microbiology Autonomous University
- ◆ Degree in Pharmacy. Autonomous University
- ◆ Supervised internship at the University of Oporto at San Juan del Puerto Hospital
- ◆ Member of: Spanish Society of Clinical Microbiology and Infectious Diseases, Madrid College of Pharmacists

**Dr. García Díez, Julio**

- ◆ Pharmacist specialized in Microbiology and Parasitology
- ◆ Area Specialist in Microbiology and Clinical Parasitology at the University Hospital of Fuenlabrada
- ◆ Area Specialist in Microbiology and Clinical Parasitology at the Severo Ochoa University Hospital
- ◆ Author of numerous publications for scientific congresses
- ◆ Degree in Pharmacy, Complutense University of Madrid
- ◆ Master's Degree in Infectious Diseases and Antimicrobial Treatment in the Cardenal Herrera University
- ◆ Expert in Chronic Infectious Diseases and Imported Pathology by Cardenal Herrera University

**Ms. Losada Machuca, Carmen Narcisa**

- ◆ Microbiology Specialist
- ◆ Assistant Specialist in Microbiology at the Hospital San Juan de Dios de Bormujos
- ◆ Postgraduate Certificate in Design and Statistics in Health Sciences from the Autonomous University of Barcelona
- ◆ Degree in Pharmacy, University of Seville
- ◆ Lecturer of the Master in Mycobacterial Infections: Comprehensive Management of Tuberculosis and Other Mycobacterial Infections
- ◆ Member of: European Society of Clinical Microbiology and infectious Diseases, Spanish Society of Infectious Diseases and Clinical Microbiology



*A unique, key, and decisive educational experience to boost your professional development”*

# 04

## Structure and Content

The syllabus of the Postgraduate Diploma has been developed in order to address in a detailed and comprehensive way the main existing problems for the diagnosis and treatment of non-mycobacterial, non-tuberculosis infections. A deepening that is developed throughout the 3 modules that make up this Postgraduate Diploma, which devotes a final module to the latest advances in the control and prevention of leprosy in certain parts of the world. The content of the entire syllabus will be available from the first day, which will make it easier for students to renew their knowledge and make academic teaching compatible with their personal responsibilities.





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*Access the latest treatments applied by infectious disease experts to address Mycobacterium fortuitum complex and Mycobacterium kansasii"*

## Module 1. Infections by Non-Tuberculous Mycobacteria

- 1.1. Evolution
- 1.2. Current Problems
- 1.3. Mycobacterium Avium Complex
  - 1.3.1. Species included in the Complex
  - 1.3.2. Microbiological Characteristics
  - 1.3.3. Clinical Picture
  - 1.3.4. Treatment
- 1.4. Mycobacterium Kansasii
  - 1.4.1. Microbiological Characteristics
  - 1.4.2. Clinical Picture
  - 1.4.3. Treatment
- 1.5. Mycobacterium Ulcerans
  - 1.5.1. Microbiological Characteristics
  - 1.5.2. Clinical Picture
  - 1.5.3. Treatment
- 1.6. Mycobacterium Genavense
  - 1.6.1. Microbiological Characteristics
  - 1.6.2. Clinical Picture
  - 1.6.3. Treatment
- 1.7. Mycobacterium Haemophilum
  - 1.7.1. Microbiological Characteristics
  - 1.7.2. Clinical Picture
  - 1.7.3. Treatment
- 1.8. Mycobacterium Marinum
  - 1.8.1. Microbiological Characteristics
  - 1.8.2. Clinical Picture
  - 1.8.3. Treatment
- 1.9. Mycobacterium Scrofulaceum
  - 1.9.1. Microbiological Characteristics
  - 1.9.2. Clinical Picture
  - 1.9.3. Treatment

- 1.10. Mycobacterium Gordonae
  - 1.10.1. Microbiological Characteristics
  - 1.10.2. Clinical Picture
  - 1.10.3. Treatment

## Module 2. Others Infections by Non-Tuberculous Mycobacteria

- 2.1. Evolution
- 2.2. Current Problems
- 2.3. Mycobacterium Abscessus
  - 2.3.1. Microbiological Characteristics
  - 2.3.2. Clinical Picture
  - 2.3.3. Diagnosis and Treatment
- 2.4. Mycobacterium Chelonae
  - 2.4.1. Microbiological Characteristics
  - 2.4.2. Clinical Picture
  - 2.4.3. Diagnosis and Treatment
- 2.5. Mycobacterium Fortuitum Complex
  - 2.5.1. Microbiological Characteristics
  - 2.5.2. Clinical Picture
  - 2.5.3. Diagnosis and Treatment
- 2.6. Mycobacterium Malmoeense
  - 2.6.1. Microbiological Characteristics
  - 2.6.2. Clinical Picture
  - 2.6.3. Diagnosis and Treatment
- 2.7. Mycobacterium Simiae
  - 2.7.1. Microbiological Characteristics
  - 2.7.2. Clinical Picture
  - 2.7.3. Diagnosis and Treatment
- 2.8. Mycobacterium Szulgai
  - 2.8.1. Microbiological Characteristics
  - 2.8.2. Clinical Picture
  - 2.8.3. Treatment

- 2.9. Mycobacterium Xenopi
  - 2.9.1. Microbiological Characteristics
  - 2.9.2. Clinical Picture
  - 2.9.3. Treatment
- 2.10. Other Non-Tuberculous Mycobacteria

### Module 3. Leprosy

- 3.1. Evolution
- 3.2. Reservoirs and Transmission
- 3.3. Etiopathogenesis
- 3.4. Epidemiology
- 3.5. Clinical Classification
  - 3.5.1. Lepromatous Leprosy
  - 3.5.2. Tuberculoid Leprosy
  - 3.5.3. Borderline Leprosy
- 3.6. Pathologic Anatomy
- 3.7. Diagnostic
  - 3.7.1. Clinical Suspicion
  - 3.7.2. Sample Collection
  - 3.7.3. Common Techniques
  - 3.7.4. Molecular Techniques
- 3.8. Treatment
  - 3.8.1. Resistance Development
- 3.9. Prevention and Control
- 3.10. Relevant Aspects



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.





#### 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 Non-Tuberculous Mycobacterial Infections 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 Non-Tuberculous Mycobacterial Infections** 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 certificate 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 Postgraduate Diploma in Non-Tuberculous Mycobacterial Infections**

Official No. of Hours: **450 h.**



\*Apostille Convention. In the event that the student wishes to have their paper certificate 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  
development languages  
virtual classroom

**tech** technological  
university

**Postgraduate Diploma**  
Non-Tuberculous  
Mycobacterial Infections

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

# Postgraduate Diploma

## Non-Tuberculous Mycobacterial Infections

