



## Postgraduate Diploma

Clinical Infectology of Communicable Bloodborne Diseases

» Modality: online

» Duration: 6 months

» Certificate: TECH Technological University

» Dedication: 16h/week

» Schedule: at your own pace

» Exams: online

Website: www.techtitute.com/us/pharmacy/postgraduate-diploma/postgraduate-diploma-clinical-infectology-communicable-bloodborne-diseases

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## tech 06 | Introduction

The development and spread of bacterial resistance to antibiotics is one of the main problems of infection control in most countries. Therefore, for example, the emergence of pneumococci resistant to penicillin or enterococci resistant to vancomycin, for example, should be recalled. The multitude of resistance cases has raised alarms about a possible global antibiotic crisis.

Another challenge in relation to infectious diseases is the emergence in recent years of several new diseases with high morbidity. of several new diseases with high morbidity in recent years, which requires an important level of updating in order to prevent new infections and reduce the morbidity figures for infections.

Therefore, pharmacy professionals, regardless of where they work, can see in this Postgraduate Diploma the opportunity to take a teaching program that brings together the most advanced and in-depth knowledge of the most important health problems in the field of infectious diseases and microbiology, where a group of professors of high scientific rigor and extensive international experience provides the most complete and up-to-date information on prevention, diagnosis, treatment and care of individual patients and population groups, suffering from the most prevalent and deadly infectious diseases.

In this case, the program focuses on bloodborne diseases, including the different types of hepatitis or HIV/AIDS, infections that can be acquired, for example, by simple contact with a needle that has been in contact with the blood or other body fluids of an infected person, or through sexual intercourse, in the case of HIV/AIDS.

This **Postgraduate Diploma in Clinical Infectology of Bloodborne Diseases** contains the most complete and up-to-date educational program on the market. The most important features of the training include:

- Practical cases presented by experts in infectious diseases
- 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 the self-assessment process can be carried out to improve learning
- 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



The Postgraduate Diploma in Clinical Infectology of Bloodborne Diseases will allow you to increase your training and professional improvement in your healthcare practice"



Being fully aware that bloodborne infections are one of the most serous healthcare problems worldwide, TECH has designed this program for pharmacy professionals to be aware of the latest advances in this field"

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

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

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

Increase your decision-making confidence in your daily practice thanks to the knowledge that you will acquire through this Postgraduate Certificate.

This is the best way to specialize in Clinical Infectious Diseases without leaving aside your work and family life, since you can do it 100% online.





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Through this Postgraduate Diploma, students will be able to improve their daily work and offer higher quality care in their daily practice as pharmacists"

## tech 10 | Objectives



## **General Objectives**

- Explore key aspects of Clinical Infectious Diseases and Advanced Antibiotic Therapeutics
- Manage the prevention, diagnosis and treatment of infectious diseases
- Explore a multidisciplinary and integrative approach to facilitate the control of these pathologies.
- Acquire skills in the area of Clinical Infectious Diseases and Advanced Antibiotic Therapeutics
- Be able to apply the latest technological innovations to establish an optimal management in diagnostics



Evaluate the comprehensive care received by patients with infections in patients with coinfection and therapeutic considerations"





#### **Specific Objectives**

#### Module 1. Epidemiology and microbiology of infectious diseases

- Understand the epidemiological, economic, social and political conditions of the countries with major infectious diseases
- Identify the different taxonomies of infectious agents, as well as the properties of microorganisms
- Explore chemical and physical Agents from microorganisms
- Become familiar with the indications and interpretations of a microbiological study, understanding all the technical aspects of it

#### Module 2. Occupational Accident and Bloodborne Pathogens

- Address the important role of microbiology and the infectologist in the control of infectious diseases
- Describe the main elements that favour occupational accidents and the transmission of blood-borne pathogens
- Analyze the diagnostic and therapeutic approach to accidents Involving blood

#### Module 3. Hepatitis, Tuberculosis and HIV/AIDS Infection

- Describe the clinical picture, viral markers, course and treatment of hepatitis, tuberculosis and HIV/AIDS infection
- Understand in detail the clinical manifestations of co-infection at the pulmonary and extrapulmonary levels
- Evaluate comprehensive care received by patients with infections in patients with coinfection and therapeutic considerations
- Consider other anti-tuberculosis treatments in patients with TB/HIV/AIDS co-Infection

#### Module 4. Multi-Resistance and Vaccines

- Identify the acquired genetic mechanisms that lead to antimicrobial resistance
- Explore the different infections that have developed resistance to antiviral drugs
- Know the general aspects of vaccination, as well as its immunological basis, its production process and the risk for people
- Establish the correct method for the use of vaccines





## tech 14 | Course Management

#### Management



#### Dr. Díaz Pollán, Beatriz

- Faculty Specialist Déu Hospital La Paz University Hospital
- Official Doctoral Programme in Clinical Medicine Clinical symptoms, University Rey Juan Carlos
- Degree in Medicine and Surgery, Universidad Autónoma de Madrid.
- · Master's Degree in Infectious Diseases and Antimicrobial Treatment from CEU Cardenal Herrera University
- · Postgraduate Certificate in Community and Nosocomial Infections from CEU Cardenal Herrera University
- · Postgraduate Certificate in Chronic Infectious Diseases and Imported Infections from CEU Cardenal Herrera University
- Postgraduate Certificate in Microbiological Diagnosis, Antimicrobial Treatment and Research in Infectious Pathology from CEU Cardenal Herrera University
- Faculty Specialist Déu Hospital San Carlos Clinical Hospital
- Resident doctor, San Carlos Clinical Hospital

#### **Professors**

#### Dr. Rico, Alicia

- Specialist in the Microbiology and Parasitology Department at La Paz University Hospital, Madrid
- Degree in Medicine from the Complutense University of Madrid.
- Doctorate Courses at the Complutense University of Madrid
- Assistant and co-founder of the Infectious Diseases and Clinical Microbiology Unit, La Paz University Hospital, Madrid
- Clinical teaching collaborator Department of Medicine of the UAM

#### Dr. Ramos, Juan Carlos

- Doctor at La Paz University Hospital, Madrid
- Official Doctoral Programme in Clinical Medicine. University of Alcalá
- $\bullet\,$  Degree in Medicine and Surgery from the Complutense , University of Madrid
- Master's Degree in Infectious Diseases in Intensive Care, Fundación Universidad-Empresa Valencia
- Author of several community publications

#### Dr. Loeches Yagüe, María Belén

- Specialist in the area of Infectious Diseases at La Paz General University Hospital, Madrid.
- Doctor in Medicine, Autonomous University, Madrid
- Degree in Medicine at Madrid Complutense University
- Master in Theoretical and Practical Learning in Infectious Diseases. Complutense University of Madrid
- Specialised Training in Microbiology and Infectious Diseases. Gregorio Marañón General University Hospital
- Professor of Infectious Diseases at the Infanta Sofía University Hospital in Madrid, European University of Madrid

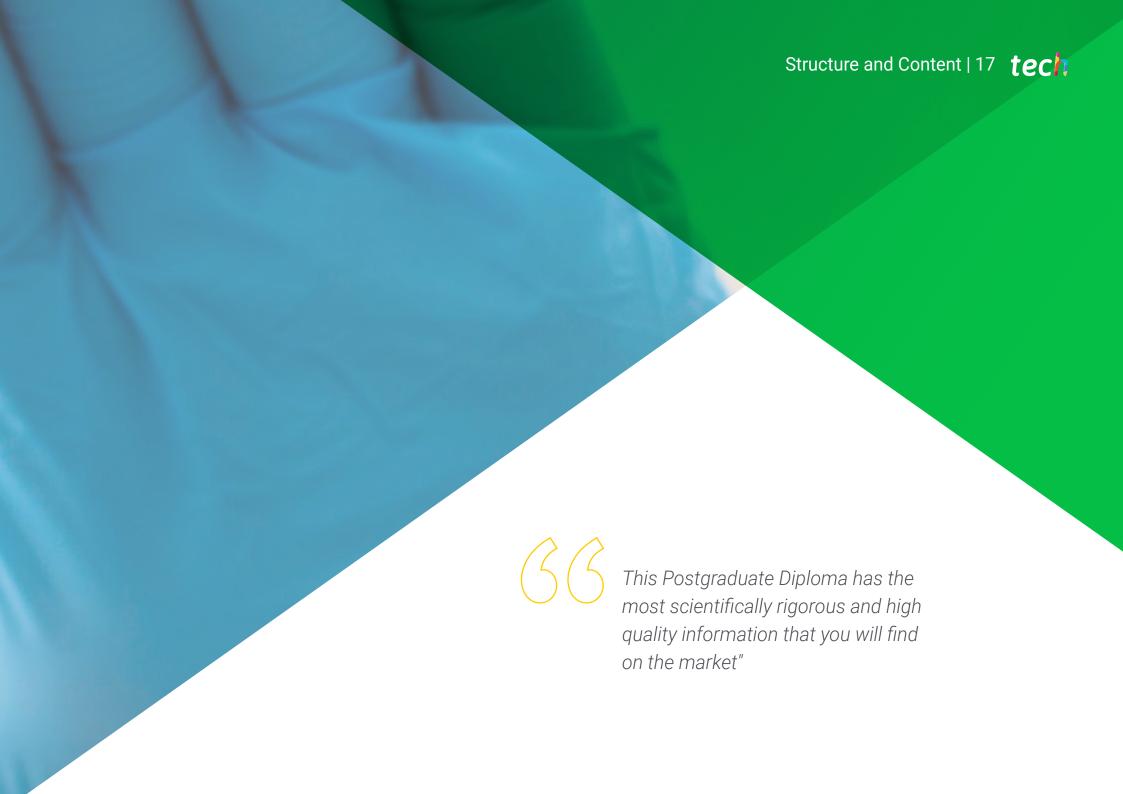
#### Dr. Arribas López, José Ramón

- Head of Department of the Infectious Diseases and Clinical Microbiology Unit, La Paz University Hospital of Internal Medicine, Madrid
- Doctor in Medicine, Autonomous University, Madrid.
- Degree in Medicine and Surgery from the Complutense University of Madrid.
- Coordinator of the High-Level Isolation Unit La Paz Carlos III
- Member Interministerial Committee for the management of the Ebola crisis
- Head of the AIDS and Infectious Diseases research group at IdiPAZ

#### Dr. Mora Rillo, Marta

- Specialist in the area of Infectious Diseases at La Paz University Hospital
- Doctor in Medicine, Autonomous University, Madrid
- Degree in Medicine and Surgery, University of Zaragoza.
- Master's Degree in Infectious Diseases in Intensive Care, University of Valencia
- Online Master's Degree in Infectious Diseases and Antimicrobial Treatment from CEU Cardenal Herrera University
- Master's Degree in Tropical Medicine and International Health, Autonomous University of Madrid
- Expert in Emerging and High-Risk Virus Pathology, Autonomous University of Madrid
- Expert in Tropical Medicine, Autonomous University of Madrid





## tech 18 | Structure and Content

#### Module 1. Epidemiology and Microbiology of Infectious Diseases

- 1.1. Epidemiological, Economic, Social and Political Conditions in Continents Which Favor the Development of Infectious Diseases
  - 1.1.1. Africa:
  - 1.1.2. America:
  - 1.1.3. Europe and Asia
- 1.2. New and Emerging Diseases By Continent
  - 1.2.1. Morbidity and Mortality From Infectious Diseases in Africa
    - 1.2.2. Morbidity and Mortality From Infectious Diseases in the Americas
    - 1.2.3. Infectious Disease Morbidity and Mortality in Asia
    - 1.2.4. Morbidity and Mortality From Infectious Diseases in Europe
- 1.3. The Taxonomy Of Infectious Agents
  - 1.3.1. Viruses
  - 1.3.2. Bacteria
  - 1.3.3. Fungus
  - 1.3.4. Parasites
- 1.4. Disease-producing Properties of Micro-organisms
  - 1.4.1. Mechanisms of Pathogenicity
  - 1.4.2. Mechanisms of Adhesion and Multiplication
  - 1.4.3. Mechanisms Enabling the Acquisition of Nutrients From The Host
  - 1.4.4. Mechanisms Inhibiting The Phagocytic Process
  - 1.4.5. Mechanisms For Evading The Immune Response
- 1.5. Microscopy and Staining
  - 1.5.1. Microscopes and Types of Microscopes
  - 1.5.2. Composite Stains
  - 1.5.3. Acid-resistant Micro-organism Staining
  - 1.5.4. Staining to Demonstrate Cellular Structures
- 1.6. Cultures and Growth of Micro-organisms
  - 1.6.1. General Culture Mediums
  - 1.6.2. Specific Culture Methods
- 1.7. Effect of Chemical and Physical Agents on Micro-organisms
  - 1.7.1. Sterilisation and Disinfection
  - 1.7.2. Disinfectants and Antiseptics Used in Practice





## Structure and Content | 19 tech

- 1.8. Molecular Biology and its Importance for the Infectologist
  - 1.8.1. Bacterial Genetics
  - 1.8.2. Polymerase Chain Reaction Tests
- 1.9. Indication and Interpretation of Microbiological Studies

#### Module 2. Occupational Accident and Bloodborne Pathogens

- 2.1. Epidemiology of Blood Borne Pathogen Infections
- 2.2. Main Blood-Borne Infections
  - 2.2.1. Hepatitis B Virus Infection
  - 2.2.2. Hepatitis C Virus Infection
  - 2.2.3. HIV/AIDS
- 2.3. Diagnostic and Therapeutic approach to Accidents Involving Blood
  - 2.3.1. Diagnostic Follow-up of Cases
  - 2.3.2. Treatment
- 2.4. Universal Precautions in the Prevention of Accidents in the Workplace
- 2.5. Biosafety Measures and the Role of the Epidemiologist in Reducing Biohazards
  - 2.5.1. Biological Risk
  - 2.5.2. Biosecurity
  - 2.5.3. Biosecurity Plans for Biological Protection

#### Module 3. Hepatitis, Tuberculosis and HIV/AIDS Infection

- 3.1. Viral Hepatitis A
  - 3.1.1. Virus Characteristics and Replication Cycle
  - 3.1.2. Clinical Picture
  - 3.1.3. Viral Markers
  - 3.1.4. Evolution and Prognosis
  - 3.1.5. Treatment
- 3.2. Viral Hepatitis B and C
  - 3.2.1. Virus Characteristics and Replication Cycle
  - 3.2.2. Clinical Picture
  - 3.2.3. Viral Markers
  - 3.2.4. Evolution and Prognosis
  - 3.2.5. Treatment

## tech 20 | Structure and Content

- 3.3. Viral Hepatitis D and E
  - 3.3.1. Virus Characteristics and Replication Cycle
  - 3.3.2. Clinical Picture
  - 3.3.3. Viral Markers
  - 3.3.4. Evolution and Prognosis
  - 3.3.5. Treatment
- 3.4. Epidemiology of Morbidity and Mortality from TB/HIV/AIDS Coinfection
  - 3.4.1. Incidence
  - 3.4.2. Prevalence
  - 3.4.3. Mortality
- 3.5. Pathobiology from TB/HIV/AIDS Coinfection
  - 3.5.1. Pathophysiological Alterations in Co-Infection
  - 3.5.2. Pathological Alterations
- 3.6. Clinical Manifestations of Co-Infection
  - 3.6.1. Clinical Manifestations of Pulmonary TB
  - 3.6.2. Clinical Manifestations of Extrapulmonary TB
- 3.7. Diagnosis of Tuberculosis in Patients Living with HIV/AIDS
  - 3.7.1. Diagnostic Studies in Pulmonary TB in HIV/AIDS Patients
  - 3.7.2. Diagnostic Studies in Pulmonary TB in HIV/AIDS Patients
- 3.8. Integral Care of Patients with Co-infection TB and HIV/AIDS and Therapeutic Considerations
  - 3.8.1. The System of Comprehensive Care for TB/HIV/AIDS Patients
  - 3.8.2. Anti-Tuberculosis Treatment Considerations in Patients with TB/HIV/AIDS Co-Infection
  - 3.8.3. Anti-Tuberculosis Treatment Considerations in Patients with TB/HIV/AIDS Co-Infection
  - 3.8.4. The Issue of Anti-Tuberculosis and Anti-Retroviral Resistance in These Patients

#### Module 4. Multi-Resistance and Vaccines

- 4.1. The Silent Epidemic of Antibiotic Resistance
  - 4.1.1. Globalisation and Resistance
  - 4.1.2. Change from Susceptible to Resistant of the Microorganisms
- 4.2. The Main Genetic Mechanisms of Antimicrobial Resistance
  - 4.2.1. Describe the Main Mechanisms of Antimicrobial Resistance
  - 4.2.2. Selective Antimicrobial Pressure on Antimicrobial Resistance
- 4.3. Superbugs
  - 4.3.1. Pneumococcus Resistant to Penicillin and Macrolides
  - 4.3.2. Multidrug-Resistant Staphylococci
  - 4.3.3. Resistant Infections in Intensive Care Units (ICUs)
  - 4.3.4. Resistant Urinary Tract Infections
  - 4.3.5. Other Multi-Resistant Microorganisms
- 4.4. Resistant Viruses
  - 4.4.1. HIV
  - 4.4.2. Influenza
  - 4.4.3. Hepatitis Viruses
- 4.5. Multidrug-resistant Malaria
  - 4.5.1. Chloroguine Resistance
  - 4.5.2. Resistance to Other Antimalarials
- 4.6. The Main Genetic Studies of Antimicrobial Resistance
  - 4.6.1. Interpretation of Resistance Studies
- 4.7. Global Strategies for Reducing Antimicrobial Resistance
  - 4.7.1. The Control of Prescribing Antibiotics
  - 4.7.2. Microbiological Mapping and Clinical Practice Guidelines



## Structure and Content | 21 tech

- 4.8. General Overview of Vaccines
  - 4.8.1. Immunological Basis of Vaccination
  - 4.8.2. The Process of Vaccination Production
  - 4.8.3. Quality Control of Vaccines
  - 4.8.4. Vaccine Safety and Major Adverse Events
  - 4.8.5. Clinical and Epidemiological Studies for Vaccine Approval
- I.9. The Use of Vaccines
  - 4.9.1. Vaccine-Preventable Diseases and Vaccination Programmes
  - 4.9.2. Global Experiences of the Effectiveness of Vaccination Programmes
  - 4.9.3. Vaccine Candidates for New Diseases



Quickly identify viral hemorrhagic diseases and the vaccines that target these diseases"

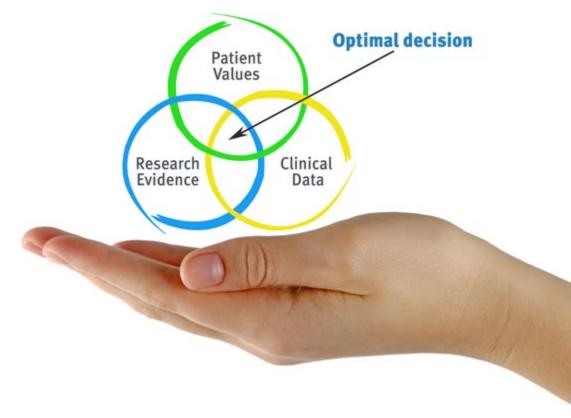


## tech 24 | Methodology

#### At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will be confronted with multiple simulated clinical cases based on real patients, in which they will have to investigate, establish hypotheses and ultimately, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Pharmacists learn better, more quickly 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, attempting to recreate the actual conditions in a pharmacist'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. Pharmacists who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their 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.



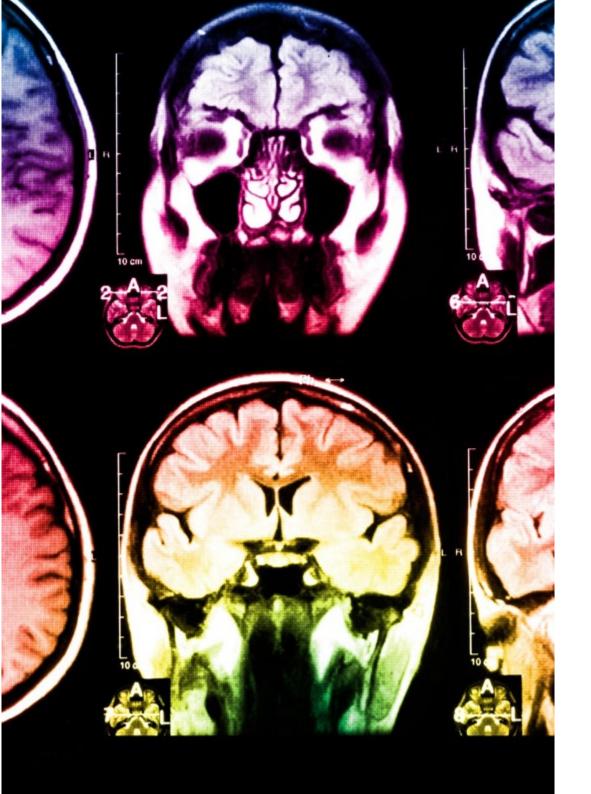
#### **Relearning Methodology**

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

Our 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, which represent a real revolution with respect to simply studying and analyzing cases.

Pharmacists will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.





## Methodology | 27 tech

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 115,000 pharmacists have been trained with unprecedented success in all clinical specialties, regardless of the surgical load. This pedagogical methodology is developed in a highly demanding environment, with a university student body with a high socioeconomic profile and an average age of 43.5 years.

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 created specifically for the course by specialist pharmacists who will be teaching the course, so that the didactic development is highly specific and accurate.

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.



#### **Video Techniques and Procedures**

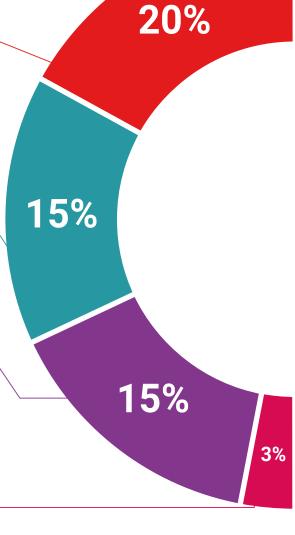
TECH introduces students to the latest techniques, to the latest educational advances, to the forefront of current pharmaceutical care procedures. All of this, first hand, and explained and detailed with precision to contribute to assimilation and a better understanding. And best of all, you can watch them as many times as you want.



#### **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 unique multimedia content presentation training system 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.



Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the expert will guide you through 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.

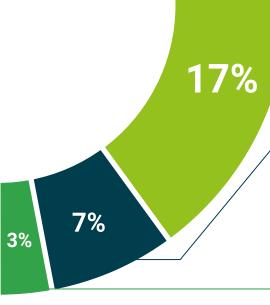
The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



#### **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.





20%





## tech 32 | Certificate

This **Postgraduate Diploma in Clinical Infectology of Communicable Bloodborne Diseases** 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 Clinical Infectology of Communicable Bloodborne Diseases

Official No of hours: 400 h.



<sup>\*</sup>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 cost...



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