

# Professional Master's Degree

Clinical Infectious Diseases and  
Advanced Antibiotic Therapeutics





## Professional Master's Degree Clinical Infectious Diseases and Advanced Antibiotic Therapeutics

- » Modality: Online
- » Duration: 12 months.
- » Certificate: TECH Global University
- » Accreditation: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

Website : [www.techtute.com/us/medicine/professional-master-degree/master-clinical-infectious-diseases-advanced-antibiotic-therapetuics](http://www.techtute.com/us/medicine/professional-master-degree/master-clinical-infectious-diseases-advanced-antibiotic-therapetuics)

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# 01

# Introduction to the Program

Infectious Diseases continue to be one of the leading threats to global public health, with conditions such as Tuberculosis, Malaria, and HIV/AIDS causing millions of cases and deaths every year. According to the World Health Organization (WHO), these diseases disproportionately affect vulnerable populations, particularly in regions with limited access to healthcare services. The spread of antibiotic-resistant bacteria and the emergence of new viruses have further increased the urgency of having trained professionals for their diagnosis, treatment, and prevention. In this context, TECH presents this 100% online program, designed and delivered by a highly specialized faculty team in the field of Infectious Diseases.



COVID-19



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*Thanks to this 100% online Professional Master's Degree, you will master the most innovative microbiological diagnostic techniques and design highly personalized therapeutic interventions”*

The management of Infectious Diseases is a constant challenge for medical professionals. The increasing resistance to antibiotics, along with the persistence of conditions such as Dengue, Typhoid Fever, and Leptospirosis, makes continuous updating in this field essential. Additionally, the emergence of new viral strains with greater transmission capacity demands advanced strategies for diagnosis, treatment, and prevention.

In response to this reality, TECH's Professional Master's Degree in Clinical Infectious Diseases and Advanced Antibiotic Therapeutics provides comprehensive and up-to-date training. The educational materials will cover the latest advances in epidemiology, severe respiratory infections, bacterial resistance, and vaccine development. The impact of the pharmaceutical and biotechnology industries in the fight against these diseases will also be explored.

This program not only expands specialized knowledge but also opens new career opportunities. Graduates will be able to work in leading hospitals, research centers, public health organizations, the pharmaceutical industry, and institutions dedicated to the prevention and treatment of Infectious Diseases.

One of the major benefits of this program is its 100% online format, with no in-person classes or fixed schedules. Additionally, the content is available from day one, allowing students to organize their study time according to their availability. Accessible from any device with an internet connection, it offers total flexibility and compatibility with professional life.

With this qualification, physicians will acquire key tools to tackle current and future challenges in the field of infectious diseases, positioning themselves as specialists in a critical area for global public health.

Furthermore, a prestigious International Guest Director will deliver 10 exclusive Masterclasses.

This **Professional Master's Degree in Clinical Infectious Diseases and Advanced Antibiotic Therapeutics** contains the most complete and up-to-date university program on the market" Its most notable features are:

- ♦ The development of practical case studies presented by experts in Medicine
- ♦ 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
- ♦ Its special emphasis on innovative methodologies in the management of the audiovisual industry
- ♦ 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



*A renowned International Guest Director will deliver 10 intensive Masterclasses on the latest advancements in Clinical Infectious Diseases and Advanced Antibiotic Therapeutics"*



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*You will master advanced microbiological diagnostics, including molecular biology techniques, genomic sequencing, and antimicrobial susceptibility testing”*

The teaching staff includes professionals belonging to the field of medicine, who contribute their work experience to this program, as well as renowned specialists from reference 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 an immersive learning experience designed to prepare for real-life situations.

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

*You will delve into the pathophysiology of Infectious Diseases, analyzing their epidemiology, transmission, and clinical progression.*

*Thanks to TECH Relearning you will be able to assimilate the essential concepts in a fast, natural and accurate way.*



02

# Why Study at TECH?

TECH is the world's largest online university. With an impressive catalog of more than 14,000 university programs, available in 11 languages, it is positioned as a leader in employability, with a 99% job placement rate. In addition, it has a huge faculty of more than 6,000 professors of the highest international prestige.





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*Study at the largest online university in the world and ensure your professional success. The future begins at TECH”*

### The world's best online university, according to FORBES

The prestigious Forbes magazine, specialized in business and finance, has highlighted TECH as "the best online university in the world" This is what they have recently stated in an article in their digital edition in which they echo the success story of this institution, "thanks to the academic offer it provides, the selection of its teaching staff, and an innovative learning method oriented to form the professionals of the future".

### The best top international faculty

TECH's faculty is made up of more than 6,000 professors of the highest international prestige. Professors, researchers and top executives of multinational companies, including Isaiah Covington, performance coach of the Boston Celtics; Magda Romanska, principal investigator at Harvard MetaLAB; Ignacio Wistumba, chairman of the department of translational molecular pathology at MD Anderson Cancer Center; and D.W. Pine, creative director of TIME magazine, among others.

### The world's largest online university

TECH is the world's largest online university. We are the largest educational institution, with the best and widest digital educational catalog, one hundred percent online and covering most areas of knowledge. We offer the largest selection of our own degrees and accredited online undergraduate and postgraduate degrees. In total, more than 14,000 university programs, in ten different languages, making us the largest educational institution in the world.



### The most complete syllabuses on the university scene

TECH offers the most complete syllabuses on the university scene, with programs that cover fundamental concepts and, at the same time, the main scientific advances in their specific scientific areas. In addition, these programs are continuously updated to guarantee students the academic vanguard and the most demanded professional skills. and the most in-demand professional competencies. In this way, the university's qualifications provide its graduates with a significant advantage to propel their careers to success.

### A unique learning method

TECH is the first university to use Relearning in all its programs. This is the best online learning methodology, accredited with international teaching quality certifications, provided by prestigious educational agencies. In addition, this innovative academic model is complemented by the "Case Method", thereby configuring a unique online teaching strategy. Innovative teaching resources are also implemented, including detailed videos, infographics and interactive summaries.

#### The official online university of the NBA

TECH is the official online university of the NBA. Thanks to our agreement with the biggest league in basketball, we offer our students exclusive university programs, as well as a wide variety of educational resources focused on the business of the league and other areas of the sports industry. Each program is made up of a uniquely designed syllabus and features exceptional guest hosts: professionals with a distinguished sports background who will offer their expertise on the most relevant topics.

#### Leaders in employability

TECH has become the leading university in employability. Ninety-nine percent of its students obtain jobs in the academic field they have studied within one year of completing any of the university's programs. A similar number achieve immediate career enhancement. All this thanks to a study methodology that bases its effectiveness on the acquisition of practical skills, which are absolutely necessary for professional development.



#### Google Premier Partner

The American technology giant has awarded TECH the Google Premier Partner badge. This award, which is only available to 3% of the world's companies, highlights the efficient, flexible and tailored experience that this university provides to students. The recognition not only accredits the maximum rigor, performance and investment in TECH's digital infrastructures, but also places this university as one of the world's leading technology companies.



#### The top-rated university by its students

Students have positioned TECH as the world's top-rated university on the main review websites, with a highest rating of 4.9 out of 5, obtained from more than 1,000 reviews. These results consolidate TECH as the benchmark university institution at an international level, reflecting the excellence and positive impact of its educational model.



# 03 Syllabus

This Professional Master's Degree in Clinical Infectious Diseases and Advanced Antibiotic Therapeutics offers in-depth and up-to-date specialization in the diagnosis, treatment, and control of complex infections. Through a practical and innovative approach, the program explores everything from the most advanced antimicrobial therapies to the latest trends in biotechnology applied to healthcare. With a syllabus designed for flexibility and autonomous learning, this Professional Master's Degree will enable you to make a difference in a critical area of Medicine.





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*You will optimize antibiotic prescription by applying principles of pharmacokinetics and pharmacodynamics to enhance the effectiveness of therapies”*



## Module 1. Epidemiology and Microbiology of Infectious Diseases

- 1.1. Epidemiological, Economic, and Social Conditions by Continent that 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 America
  - 1.2.3. Morbidity and Mortality from Infectious Diseases in Asia
  - 1.2.4. Morbidity and Mortality from Infectious Diseases in Europe
- 1.3. Taxonomy of Infectious Agents
  - 1.3.1. Viruses
  - 1.3.2. Bacteria
  - 1.3.3. Fungi
  - 1.3.4. Parasites
- 1.4. Properties of Microorganisms to Cause Disease
  - 1.4.1. Pathogenicity Mechanisms
  - 1.4.2. Adhesion and Multiplication Mechanisms
  - 1.4.3. Mechanisms that Allow Nutrient Acquisition from the Host
  - 1.4.4. Mechanisms that Inhibit the Phagocytic Process
  - 1.4.5. Immune Evasion Mechanisms
- 1.5. Microscopy and Staining
  - 1.5.1. Microscopes and Types of Microscopes
  - 1.5.2. Compound Stains
  - 1.5.3. Staining of Acid-Fast Microorganisms
  - 1.5.4. Stains to Demonstrate Cellular Structures
- 1.6. Cultures and Growth of Microorganisms
  - 1.6.1. General Culture Media
  - 1.6.2. Specific Culture Media
- 1.7. Effect of Chemical and Physical Agents on Microorganisms
  - 1.7.1. Sterilization and Disinfection
  - 1.7.2. Disinfectants and Antiseptics Used in Practice

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

## Module 2. Cancer and Immunosuppression

- 2.1. The Innate and Adaptive Immune Response
  - 2.1.1. Cells and Cytokines in Response to Infectious Agents
  - 2.1.2. Characteristics of the Innate Immune Response
- 2.2. Immunosuppression in Different Conditions of Sepsis Patients
  - 2.2.1. The Role of Cytotoxics in Immunosuppression
  - 2.2.2. The Role of Cytotoxics in Immunosuppression
  - 2.2.3. Infection in Transplant Patients
- 2.3. The Oncohematological Patient with Sepsis
  - 2.3.1. Bone Marrow Aplasia
  - 2.3.2. Neutropenia
  - 2.3.3. Infections in Patients with Cancer
- 2.4. The Diabetic Patient with Sepsis
  - 2.4.1. The Immune System in Diabetes *Mellitus*
  - 2.4.2. Main Infections in the Diabetic Patient
- 2.5. Comprehensive Approach to the Immunocompromised Patient with Sepsis
  - 2.5.1. Diagnostic Considerations
  - 2.5.2. Therapeutic Measures
- 2.6. The Link Between Cancer and Microorganisms
  - 2.6.1. Oncogenesis and Infection
  - 2.6.2. Virus and Cancer
    - 2.6.2.1. Epstein-Barr Virus
    - 2.6.2.2. Hepatitis B and C Virus
    - 2.6.2.3. Human Papillomavirus
    - 2.6.2.4. T-cell Lymphoma/Leukemia Viruses
    - 2.6.2.5. Herpesvirus Associated with Kaposi's Sarcoma

- 2.7. Bacteria and Cancer
  - 2.7.1. *Helicobacter pylori*
- 2.8. Parasites and Cancer
  - 2.8.1. *Schistosoma haematobium*
  - 2.8.2. *Opisthorchis viverrin*
- 2.9. Bacteria as Allies Against Cancer

### Module 3. Occupational Accident and Blood-Borne Pathogens

- 3.1. Epidemiology of Blood-Borne Pathogen Infections
- 3.2. Main Blood-Borne Infections
  - 3.2.1. Hepatitis B Virus Infection
  - 3.2.2. Hepatitis C Virus Infection
  - 3.2.3. HIV/AIDS
- 3.3. Diagnostic and Therapeutic Approach to Accidents Involving Blood
  - 3.3.1. Diagnostic Follow-up of Cases
  - 3.3.2. Treatment
- 3.4. Universal Precautions in Preventing Workplace Accidents
- 3.5. Biosafety Measures and the Role of the Epidemiologist in Reducing Biohazards
  - 3.5.1. Biological Risk
  - 3.5.2. Biosecurity
  - 3.5.3. Biosecurity Plans for Biological Protection

### Module 4. Infections in the International Traveller

- 4.1. Vaccination for International Travelers
  - 4.1.1. Main Vaccines for International Travelers
  - 4.1.2. Vaccination Against Yellow Fever
- 4.2. Prophylaxis for Travellers to Tropical Areas
  - 4.2.1. Pharmacological Treatment Based on the Geographic Area to be Visited
  - 4.2.2. Glucose-6-Phosphate Dehydrogenase Deficiency and Antimalarial Drugs
  - 4.2.3. Traveler Prevention Measures in Tropical Areas

- 4.3. Traveller's Diarrhea
  - 4.3.1. Epidemiology
  - 4.3.2. Etiology
  - 4.3.3. Clinical Manifestations
  - 4.3.4. Diagnosis
  - 4.3.5. Treatment
- 4.4. Health Control for International Travelers
- 4.5. Fever After International Travell
  - 4.5.1. Main Etiologies
  - 4.5.2. Diagnostic Approach
  - 4.5.3. Imported Infectious Pathology in the International Traveller

### Module 5. Non-Communicable Chronic Diseases and Infections

- 5.1. Infections and the Chronic Inflammatory Response
  - 5.1.1. Immune System Cells of the Chronic Inflammatory Response to Infections
  - 5.1.2. The Granulomatous Response and Delayed-type Hypersensitivity
  - 5.1.3. The Role of Chemical Mediators of the Chronic Inflammatory Response
- 5.2. Stress, Immunity and Infectious Agents
  - 5.2.1. Neurological, Endocrine and Immune Interrelationships
  - 5.2.2. Stress and the Immune Response
  - 5.2.3. Chronic Fatigue Syndrome and Infections
- 5.3. Atherosclerosis, Cardiovascular Disease and the Role of Infectious Agents
  - 5.3.1. The Role of Infectious Agents in Atherosclerosis
  - 5.3.2. Cardiovascular Disease Mortality and its Association with Infectious Agents
  - 5.3.3. Cardiovascular Mortality in Patients with Pneumonia
- 5.4. Digestive Diseases Associated with Infectious Microorganisms
  - 5.4.1. Gut Flora and its Important Functions
  - 5.4.2. Peptic Gastrointestinal Disease and *Helicobacter pylori*
  - 5.4.3. Inflammatory Bowel Disease and Infections
  - 5.4.4. Whipple's Disease

- 5.5. Neurological Diseases and Infections
  - 5.5.1. Dementia and Infections
  - 5.5.2. Multiple Sclerosis and its Relationship to Certain Infectious Agents
  - 5.5.3. Guillain-Barré Syndrome, Immunity and Viral Infections
  - 5.5.4. Parkinson's Disease and its Association With Infections
- 5.6. Endocrinopathies and Infections
  - 5.6.1. Diabetes *Mellitus* and Infections
  - 5.6.2. Chronic Thyroiditis and Infections
- 5.7. The Infectious Theory of Rheumatic Diseases
  - 5.7.1. Rheumatoid Arthritis
  - 5.7.2. Systemic Lupus Erythematosus
  - 5.7.3. Seronegative Spondyloarthropathies
  - 5.7.4. Wegener's Granulomatosis
  - 5.7.5. Polymyalgia Rheumatica

## Module 6. The Most Lethal Respiratory Infections

- 6.1. Immunology and Defense Mechanisms of the Respiratory System
- 6.2. Influenza and Other Lethal Viral Infections
  - 6.2.1. Influenza Epidemics
  - 6.2.2. H1N1 Influenza
  - 6.2.3. Vaccine Against Influenza and the Prevention of Mortality
- 6.3. Bacterial Pneumonia: The Captain of the Armies of Death
  - 6.3.1. Community-Acquired Pneumonia (CAP)
  - 6.3.2. Intrahospital Pneumonia
  - 6.3.3. Pneumonia Associated With Healthcare
- 6.4. Tuberculosis
  - 6.4.1. Epidemiology
  - 6.4.2. Pathobiology
  - 6.4.3. Classification
  - 6.4.4. Clinical Presentation
  - 6.4.5. Diagnosis
  - 6.4.6. Treatment

- 6.5. Loeffler's Syndrome and Eosinophilic Syndromes
  - 6.5.1. Pulmonary Phase of Parasites
  - 6.5.2. Clinical and Radiological Manifestations
  - 6.5.3. Other Eosinophilic Pneumonias
- 6.6. Antimicrobials and the Respiratory System
  - 6.6.1. Antimicrobials Effective in the Respiratory System
  - 6.6.2. Immunomodulatory Role of Macrolides in Pneumonias

## Module 7. Urinary Tract and Sexually Transmitted Infections

- 7.1. Epidemiology of Urinary Tract Infection
  - 7.1.1. Factors Explaining the Increased Morbidity of Urinary Tract Infection in Women
- 7.2. Immunology of the Urinary System
- 7.3. Classification of Urinary Tract Infection
- 7.4. Urinary Infection
  - 7.4.1. Etiology
  - 7.4.2. Clinical Presentation
  - 7.4.3. Diagnosis
  - 7.4.4. Treatment
- 7.5. Urinary Tract Infection in the Bladder Catheterised, Prostatic and Elderly Patient
- 7.6. Most commonly Used Antimicrobials in Urinary Tract Infections
  - 7.6.1. Pharmacological Elements
  - 7.6.2. Antimicrobial Resistance of the Main Bacteria Affecting the Urinary Tract
- 7.7. Epidemiological Update on Major STIs
- 7.8. Viral STIs
  - 7.8.1. Perinatal Herpes Simplex
  - 7.8.2. Viral Hepatitis
  - 7.8.3. Human Papillomavirus
  - 7.8.4. HIV
- 7.9. Bacterial STIs
  - 7.9.1. Gonorrhoea
  - 7.9.2. Syphilis
  - 7.9.3. Soft Chancre
  - 7.9.4. Lymphogranuloma Venereum

- 7.10. Trichomoniasis and Genital Candidiasis
- 7.11. Trichomoniasis: Epidemiology, Aetiology, Clinical Presentation, Diagnosis and Treatment
- 7.12. Genital Candidiasis: Epidemiology, Etiology, Clinical Presentation, Diagnosis and Treatment
- 7.13. The Syndromic Approach to STIs and Control Measures
  - 7.13.1. Main Clinical Framework
  - 7.13.2. STI Control Measures
- 7.14. Multidrug-Resistant Gonococcus: Treatment Alternatives
  - 7.14.1. Global Situation
  - 7.14.2. Therapeutic Alternatives
- 7.15. Current Management of Recurrent Herpes Infection
  - 7.15.1. Focus Latest Information of Recurrent Herpes Infection

## Module 8. Food-Borne Infections

- 8.1. Food-Borne Diseases, a Modern Day Health Problem
  - 8.1.1. Epidemiology
  - 8.1.2. Causes of Foodborne Infections
- 8.2. Classification of Foodborne Infections
  - 8.2.1. Intoxications
  - 8.2.2. Infections
  - 8.2.3. Toxi-infections
- 8.3. Main Aetiological Agents
  - 8.3.1. Salmonella
  - 8.3.2. Staphylococci
  - 8.3.3. *Listeria Monocytogenes*
  - 8.3.4. *Escherichia coli*, 0157:H7
  - 8.3.5. *Clostridium Botulinum*
- 8.4. Food-Borne Diseases and their Socio-Economic Impact
  - 8.4.1. Socio-Economic Consequences of the ATS
- 8.5. Main Measures for the Control of Food-Borne Infections
  - 8.5.1. Primary Prevention of ATS
  - 8.5.2. Health Education
  - 8.5.3. State Health Control and ATS

## Module 9. Hepatitis, HIV/AIDS Coinfection, and Tuberculosis

- 9.1. Viral Hepatitis A
  - 9.1.1. Virus Characteristics and Replication Cycle
  - 9.1.2. Clinical Presentation
  - 9.1.3. Viral Markers
  - 9.1.4. Evolution and Prognosis
  - 9.1.5. Treatment
- 9.2. Viral Hepatitis B and C
  - 9.2.1. Virus Characteristics and Replication Cycle
  - 9.2.2. Clinical Presentation
  - 9.2.3. Viral Markers
  - 9.2.4. Evolution and Prognosis
  - 9.2.5. Treatment
- 9.3. Viral Hepatitis D and E
  - 9.3.1. Virus Characteristics and Replication Cycle
  - 9.3.2. Clinical Presentation
  - 9.3.3. Viral Markers
  - 9.3.4. Evolution and Prognosis
  - 9.3.5. Treatment
- 9.4. Epidemiology of Morbidity and Mortality in Tuberculosis and HIV/AIDS Coinfection
  - 9.4.1. Incidence
  - 9.4.2. Prevalence
  - 9.4.3. Mortality
- 9.5. Pathobiology of Tuberculosis and HIV/AIDS Coinfection
  - 9.5.1. Pathophysiological Alterations in Coinfection
  - 9.5.2. Pathological Alterations
- 9.6. Clinical Manifestations of Coinfection
  - 9.6.1. Clinical Manifestations of Pulmonary TB
  - 9.6.2. Clinical Manifestations of Extrapulmonary TB
- 9.7. Diagnosis of Tuberculosis in Patients Living with HIV/AIDS
  - 9.7.1. Diagnostic Studies in Pulmonary TB in HIV/AIDS Patients

- 9.8. Integral Care of Patients with Co-infection TB and HIV/AIDS and Therapeutic Considerations
  - 9.8.1. Comprehensive Care System for TB/HIV/AIDS Patients
  - 9.8.2. Considerations in Antituberculosis Treatment for Patients with Tuberculosis and HIV/AIDS Coinfection
  - 9.8.3. Considerations in Antiretroviral Treatment for Patients with Tuberculosis and HIV/AIDS Coinfection
  - 9.8.4. The Issue of Drug Resistance in Antituberculosis and Antiretroviral in These Patients

## Module 10. Viral Hemorrhagic Diseases and Arboviruses

- 10.1. Viral Hemorrhagic Diseases
  - 10.1.1. Epidemiology
  - 10.1.2. Classification
  - 10.1.3. Diagnostic Approach to Viral Hemorrhagic Diseases
  - 10.1.4. The Development of Vaccines for New Diseases
  - 10.1.5. Measures for the Control of Viral Hemorrhagic Diseases
- 10.2. Ebola Hemorrhagic Fever
  - 10.2.1. Characteristics and Replicative Cycle of the Virus
  - 10.2.2. Clinical Presentation
  - 10.2.3. Diagnosis
  - 10.2.4. Treatment
- 10.3. South American Hemorrhagic Fevers
  - 10.3.1. Virus Characteristics and Replication Cycle
  - 10.3.2. Clinical Presentation
  - 10.3.3. Diagnosis
  - 10.3.4. Treatment
- 10.4. Arbovirus
  - 10.4.1. Epidemiology

- 10.4.2. Vector Control
- 10.4.3. Other Arbovirosis
- 10.5. Yellow Fever
  - 10.5.1. Concept
  - 10.5.2. Replicative Cycle of the Virus
  - 10.5.3. Clinical Manifestations
  - 10.5.4. Diagnosis
  - 10.5.5. Treatment
- 10.6. Dengue
  - 10.6.1. Concept
  - 10.6.2. Replicative Cycle of the Virus
  - 10.6.3. Clinical Manifestations
  - 10.6.4. Diagnosis
  - 10.6.5. Treatment
- 10.7. Chikungunya
  - 10.7.1. Concept
  - 10.7.2. Replicative Cycle of the Virus
  - 10.7.3. Clinical Manifestations
  - 10.7.4. Diagnosis
  - 10.7.5. Treatment
- 10.8. Zika
  - 10.8.1. Concept
  - 10.8.2. Replicative Cycle of the Virus
  - 10.8.3. Clinical Manifestations
  - 10.8.4. Diagnosis
  - 10.8.5. Treatment



**Module 11. Central Nervous System Infections**

- 11.1. Immune Defense Mechanisms of the CNS
  - 11.1.1. Defense Mechanisms of the CNS
  - 11.1.2. Immune Response in the CNS
- 11.2. Epidemiology of CNS Infections
  - 11.2.1. Morbidity
  - 11.2.2. Mortality
  - 11.2.3. Risk Factors
- 11.3. Microbiological Diagnosis of CNS Infections
  - 11.3.1. Study of Cerebrospinal Fluid
- 11.4. Meningitis
  - 11.4.1. Etiology
  - 11.4.2. Clinical Presentation
  - 11.4.3. Diagnosis
  - 11.4.4. Treatment
- 11.5. Encephalitis
  - 11.5.1. Etiology
  - 11.5.2. Clinical Presentation
  - 11.5.3. Diagnosis
  - 11.5.4. Treatment
- 11.6. Myelitis
  - 11.6.1. Etiology
  - 11.6.2. Clinical Presentation
  - 11.6.3. Diagnosis
  - 11.6.4. Treatment
- 11.7. Antibiotics and the Blood-Brain Barrier
  - 11.7.1. The Role of the Blood-Brain Barrier
  - 11.7.2. The Crossing of the Blood-Brain Barrier by Antibiotics

**Module 12. Zoonosis**

- 12.1. Overview of Zoonosis
  - 12.1.1. General Concepts and Epidemiology of Zoonosis
  - 12.1.2. Main Zoonotic Diseases on an International Level
  - 12.1.3. Prion Zoonosis
  - 12.1.4. Prions in the Aetiology of Diseases
  - 12.1.5. Bovine Spongiform Encephalopathy (or Mad Cow Disease)
  - 12.1.6. Main Zoonosis Control Measures
- 12.2. Rabies
  - 12.2.1. Epidemiology
  - 12.2.2. Infectious Agents
  - 12.2.3. Pathobiology
  - 12.2.4. Clinical Presentation
  - 12.2.5. Diagnosis
  - 12.2.6. Treatment
- 12.3. Bird Flue
  - 12.3.1. Epidemiology
  - 12.3.2. Infectious Agents
  - 12.3.3. Pathobiology
  - 12.3.4. Clinical Presentation
  - 12.3.5. Diagnosis
  - 12.3.6. Treatment
- 12.4. Leptospirosis
  - 12.4.1. Epidemiology
  - 12.4.2. Infectious Agents
  - 12.4.3. Pathobiology
  - 12.4.4. Clinical Presentation
  - 12.4.5. Diagnosis
  - 12.4.6. Treatment

- 12.5. Brucellosis
  - 12.5.1. Epidemiology
  - 12.5.2. Infectious Agents
  - 12.5.3. Pathobiology
  - 12.5.4. Clinical Presentation
  - 12.5.5. Diagnosis
  - 12.5.6. Treatment
- 12.6. Toxoplasmosis
  - 12.6.1. Epidemiology
  - 12.6.2. Infectious Agents
  - 12.6.3. Pathobiology
  - 12.6.4. Clinical Presentation
  - 12.6.5. Diagnosis
  - 12.6.6. Treatment

### Module 13. Mycobacteriosis and Anaerobic Infections

- 13.1. General Overview of Mycobacteriosis
  - 13.1.1. Microbiological Characteristics of Mycobacteria
  - 13.1.2. Immune Response to Mycobacterial Infection
  - 13.1.3. Epidemiology of Major Nontuberculous Mycobacteria Infections
- 13.2. Microbiological Methods for the Diagnosis of Mycobacteriosis
  - 13.2.1. Direct Methods
  - 13.2.2. Indirect Methods
- 13.3. Infection by *Mycobacterium avium* Intracellulare
  - 13.3.1. Epidemiology
  - 13.3.2. Infectious Agents
  - 13.3.3. Pathobiology
  - 13.3.4. Clinical Presentation
  - 13.3.5. Diagnosis
  - 13.3.6. Treatment

- 13.4. Infection by *Mycobacterium Kansalii*
  - 13.4.1. Epidemiology
  - 13.4.2. Infectious Agents
  - 13.4.3. Pathobiology
  - 13.4.4. Clinical Presentation
  - 13.4.5. Diagnosis
  - 13.4.6. Treatment
- 13.5. Leprosy
  - 13.5.1. Epidemiology
  - 13.5.2. Infectious Agents
  - 13.5.3. Pathobiology
  - 13.5.4. Clinical Presentation
  - 13.5.5. Diagnosis
  - 13.5.6. Treatment
- 13.6. Other Mycobacteriosis
- 13.7. Antimycobacterials
  - 13.7.1. Pharmacological Characteristics
  - 13.7.2. Clinical Use
- 13.8. Microbiological Characteristics of Anaerobic Germs
  - 13.8.1. Microbiological Characteristics of Anaerobic Germs
  - 13.8.2. Microbiological Studies
- 13.9. Pulmonary Abscess
  - 13.9.1. Definition
  - 13.9.2. Etiology
  - 13.9.3. Clinical Presentation
  - 13.9.4. Diagnosis
  - 13.9.5. Treatment
- 13.10. Intraabdominal and Ovarian Tube Abscesses
  - 13.10.1. Definition
  - 13.10.2. Etiology
  - 13.10.3. Clinical Presentation
  - 13.10.4. Diagnosis
  - 13.10.5. Treatment

- 13.11. Intracerebral Abscess
  - 13.11.1. Definition
  - 13.11.2. Etiology
  - 13.11.3. Clinical Presentation
  - 13.11.4. Diagnosis
  - 13.11.5. Treatment
- 13.12. Tetanus and Gangrene
  - 13.12.1. Tetanus: Neonatal and Adult
  - 13.12.2. Gangrene: Definition, Aetiology, Clinical Presentation, Diagnosis, Treatment
- 13.13. Main Antimicrobials against Anaerobic Germs
  - 13.13.1. Mechanism of Action
  - 13.13.2. Pharmacogenetics
  - 13.13.3. Dose
  - 13.13.4. Introduction
  - 13.13.5. Adverse Effects

#### **Module 14. Mycosis and Parasitosis in Infectious Diseases**

- 14.1. General Aspects on Fungi
  - 14.1.1. General Features of Fungi
  - 14.1.2. Immune Response to Fungi
- 14.2. Diagnostic Methods for Mycosis
  - 14.2.1. Direct Methods
  - 14.2.2. Indirect Methods
- 14.3. Superficial Mycosis: Tinea and Epidermatophytosis
  - 14.3.1. Definition
  - 14.3.2. Etiology
  - 14.3.3. Clinical Presentation
  - 14.3.4. Diagnosis
  - 14.3.5. Treatment
- 14.4. Deep Mycosis
  - 14.4.1. Cryptococcosis
  - 14.4.2. Histoplasmosis
  - 14.4.3. Aspergillosis
  - 14.4.4. Other Mycosis

- 14.5. Update on Antifungals
  - 14.5.1. Pharmacological Elements
  - 14.5.2. Clinical Use
- 14.6. General Overview of Parasitic Diseases
  - 14.6.1. General Features of Microbiological Parasites
  - 14.6.2. Immune Response to Parasites
  - 14.6.3. Immune Response to Protozoa
  - 14.6.4. Immune Response to Helminths
- 14.7. Diagnostic Methods for Parasites
  - 14.7.1. Diagnostic Methods for Protozoa
  - 14.7.2. Diagnostic Methods for Helminths
- 14.8. Intestinal Parasites
  - 14.8.1. Ascariasis
  - 14.8.2. Enterobiasis
  - 14.8.3. Hookworm Disease and Necatoriasis
  - 14.8.4. Trichuriasis
- 14.9. Tissue Parasitosis
  - 14.9.1. Malaria
  - 14.9.2. Trypanosomiasis
  - 14.9.3. Schistosomiasis
  - 14.9.4. Leishmaniasis
  - 14.9.5. Filariasis
- 14.10. Update on Antiparasitics
  - 14.10.1. Pharmacological Elements
  - 14.10.2. Clinical Use

#### **Module 15. Multidrug Resistance and Vaccines**

- 15.1. The Silent Epidemic of Antibiotic Resistance
  - 15.1.1. Globalization and Resistance
  - 15.1.2. Change from Susceptible to Resistant of the Microorganisms
- 15.2. The Main Genetic Mechanisms of Antimicrobial Resistance
  - 15.2.1. Describe the Main Mechanisms of Antimicrobial Resistance
  - 15.2.2. Selective Antimicrobial Pressure on Antimicrobial Resistance

- 15.3. Superbugs
  - 15.3.1. Pneumococcus Resistant to Penicillin and Macrolides
  - 15.3.2. Multidrug-Resistant Staphylococci
  - 15.3.3. Resistant Infections in Intensive Care Units (ICUs)
  - 15.3.4. Resistant Urinary Tract Infections
  - 15.3.5. Other Multi-Resistant Microorganisms
- 15.4. Resistant Viruses
  - 15.4.1. HIV
  - 15.4.2. Influenza
  - 15.4.3. Hepatitis Viruses
- 15.5. Multidrug-resistant Malaria
  - 15.5.1. Chloroquine Resistance
  - 15.5.2. Resistance to Other Antimalarials
- 15.6. The Main Genetic Studies of Antimicrobial Resistance
  - 15.6.1. Interpretation of Resistance Studies
- 15.7. Global Strategies for Reducing Antimicrobial Resistance
  - 15.7.1. The Control of Prescribing Antibiotics
  - 15.7.2. Microbiological Mapping and Clinical Practice Guidelines
- 15.8. Overview of Vaccines
  - 15.8.1. Immunological Basis of Vaccination
  - 15.8.2. The Process of Vaccination Production
  - 15.8.3. Quality Control of Vaccines
  - 15.8.4. Vaccine Safety and Major Adverse Events
  - 15.8.5. Clinical and Epidemiological Studies for Vaccine Approval
- 15.9. The Use of Vaccines
  - 15.9.1. Vaccine-Preventable Diseases and Vaccination Programs
  - 15.9.2. Global Experiences of the Effectiveness of Vaccination Programs
  - 15.9.3. Vaccine Candidates for New Diseases

## Module 16. Rare Infectious Diseases and Other Challenges in Infectiology

- 16.1. Overview of Rare Infectious Diseases
  - 16.1.1. General Concepts
  - 16.1.2. Epidemiology of Rare or Uncommon Infectious Diseases
- 16.2. Bubonic Plague
  - 16.2.1. Definition
  - 16.2.2. Etiology
  - 16.2.3. Clinical Presentation
  - 16.2.4. Diagnosis
  - 16.2.5. Treatment
- 16.3. Lyme Disease
  - 16.3.1. Definition
  - 16.3.2. Etiology
  - 16.3.3. Clinical Presentation
  - 16.3.4. Diagnosis
  - 16.3.5. Treatment
- 16.4. Babesiosis
  - 16.4.1. Definition
  - 16.4.2. Etiology
  - 16.4.3. Clinical Presentation
  - 16.4.4. Diagnosis
  - 16.4.5. Treatment
- 16.5. Rift Valley Fever
  - 16.5.1. Definition
  - 16.5.2. Etiology
  - 16.5.3. Clinical Presentation
  - 16.5.4. Diagnosis
  - 16.5.5. Treatment



- 16.6. Diphyllbothriasis
  - 16.6.1. Definition
  - 16.6.2. Etiology
  - 16.6.3. Clinical Presentation
  - 16.6.4. Diagnosis
  - 16.6.5. Treatment
- 16.7. Zygomycosis
  - 16.7.1. Definition
  - 16.7.2. Etiology
  - 16.7.3. Clinical Presentation
  - 16.7.4. Diagnosis
  - 16.7.5. Treatment
- 16.8. Cysticercosis
  - 16.8.1. Definition
  - 16.8.2. Etiology
  - 16.8.3. Clinical Presentation
  - 16.8.4. Diagnosis
  - 16.8.5. Treatment
- 16.9. Kuru
  - 16.9.1. Definition
  - 16.9.2. Etiology
  - 16.9.3. Clinical Presentation
  - 16.9.4. Diagnosis
  - 16.9.5. Treatment
- 16.10. The Re-emergence of Old Diseases: Causes and Effects
  - 16.10.1. Emerging and New Infectious Diseases that Demand New Approaches for Control
  - 16.10.2. The Rise of Microbiological Resistance to Antimicrobial Drugs
  - 16.10.3. Development of New Antibiotics



04

# Teaching Objectives

This Professional Master's Degree in Clinical Infectious Diseases and Advanced Antibiotic Therapeutics aims to provide an in-depth and up-to-date understanding of infectious diseases and their treatments. Through an interdisciplinary approach, the program fosters the development of skills for precise diagnosis, the application of effective antimicrobial therapies, and the prevention of emerging infections. Additionally, it enhances critical analysis skills concerning bacterial resistance and promotes the integration of biotechnological innovations into clinical practice.



“

*You will apply principles of global health in Infectiology, addressing antimicrobial resistance and emerging diseases from a One Health perspective”*



## General Objectives

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- ♦ Analyze the fundamental principles of epidemiology and its application in the prevention, control, and study of infectious diseases
- ♦ Understand the microbiology of infectious agents, their structure, mechanisms of action, and their impact on human health
- ♦ Explore the relationship between cancer, immunosuppression, and increased susceptibility to infections in different patient groups
- ♦ Evaluate the main transmission mechanisms, diagnostic approaches, and prevention strategies for bloodborne infections
- ♦ Identify the risks associated with infections in travelers and the preventive measures necessary to reduce their impact on public health
- ♦ Examine the relationship between chronic diseases and infections, analyzing how they affect the immune system and their treatment
- ♦ Deepen the diagnosis, treatment, and prevention of respiratory infections caused by viruses and bacteria in different populations
- ♦ Analyze urinary tract infections from their etiology to therapeutic and prevention strategies in at-risk patients
- ♦ Study sexually transmitted infections, their impact on public health, and the strategies for their prevention and clinical management
- ♦ Evaluate food safety and methods of preventing foodborne infections in various healthcare contexts
- ♦ Understand the pathophysiology, diagnosis, and treatment of hepatitis in its different types and its global health impact
- ♦ Analyze the coinfection of HIV/AIDS and tuberculosis, their clinical implications, and control strategies in vulnerable populations
- ♦ Explore viral hemorrhagic diseases and arboviral infections from an epidemiological perspective, considering their modes of transmission and control
- ♦ Apply effective strategies for surveillance, control, and prevention of infectious diseases in various clinical and community settings



*Expertly manage the drugs used in pediatric emergencies, adjusting dosages safely and efficiently”*





## Specific Objectives

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

- ◆ Understand the epidemiological, economic, social, and political conditions of countries with the highest burden of infectious diseases
- ◆ Identify the different taxonomies of infectious agents, as well as the properties of microorganisms
- ◆ Dive deeper into the chemical and physical agents of microorganisms
- ◆ Understand the indications and interpretations of microbiological studies, comprehending all technical aspects

### Module 2. Cancer and Immunosuppression

- ◆ Identify the general structures of the immune system
- ◆ Establish the common immune responses to viral and bacterial infections
- ◆ Explain the complex interrelations between infections and different types of immunosuppression
- ◆ Understand the management and treatment processes for various types of cancer

### Module 3. Occupational Accident and Blood-Borne Pathogens

- ◆ Identify the main blood-borne pathogens, their characteristics, and modes of transmission in the occupational context
- ◆ Evaluate the risks associated with occupational accidents that may result in exposure to bloodborne pathogens, as well as the conditions that favor such exposure
- ◆ Apply infection prevention and control protocols in the workplace, focusing on protection against bloodborne pathogens
- ◆ Analyze the appropriate procedures to follow in the event of an occupational accident involving blood exposure, including sample collection, medical evaluation, and post-exposure follow-up

#### **Module 4. Infections in the International Traveller**

- ♦ Highlight the importance of morbidity and mortality from infections in international travelers
- ♦ Explain the health controls for international travelers
- ♦ Know and identify the most common infections for international travelers, such as "fever after travel" and "traveler's diarrhea"
- ♦ Identify the processes to follow and the treatment of a patient with a positive diagnosis for a respiratory or contagious disease

#### **Module 5. Non-Communicable Chronic Diseases and Infections**

- ♦ Address the current pathophysiological elements between non-communicable chronic diseases and infections
- ♦ Understand the neurological, endocrine, and immune interrelations in response to stress and infectious agents
- ♦ Identify digestive diseases associated with infectious microorganisms and the role of this system in the body

#### **Module 6. The Most Lethal Respiratory Infections**

- ♦ Delve into the study of the latest clinical, diagnostic, and therapeutic elements for the deadliest respiratory infections
- ♦ Understand the fatal consequences of bacterial pneumonia associated with healthcare and other factors
- ♦ Identify the clinical picture, pathobiology and diagnosis of tuberculosis
- ♦ Analyze the creation of Loeffler's syndrome in its pulmonary phase and the clinical manifestations

#### **Module 7. Urinary Tract and Sexually Transmitted Infections**

- ♦ Evaluate the extent of urinary tract infections and the immune response in the genitourinary system

- ♦ Know in detail the urinary infections in patients with urinary catheters, prostate issues, and the elderly
- ♦ Identify and know the latest updates in STIs, as well as the main pathologies in this group based on their classification into viral and bacterial types
- ♦ Analyze the current approach to herpes and the therapeutic alternatives that have gained popularity among specialists

#### **Module 8. Food-Borne Infections**

- ♦ Understand the diseases transmitted by the consumption and mishandling of food
- ♦ Identify and analyze the classifications of food-borne infections due to improper handling
- ♦ Evaluate the main etiological agents, such as Salmonella and Staphylococcus, among others
- ♦ Comprehend the socioeconomic measures adopted by food-borne diseases for controlling foodborne infections.

#### **Module 9. Hepatitis, HIV/AIDS Coinfection, and Tuberculosis**

- ♦ Characterize the clinical presentation, viral markers, evolution, and treatment of Hepatitis, Tuberculosis, and HIV/AIDS infection
- ♦ Understand in detail the clinical manifestations of coinfection at pulmonary and extrapulmonary levels
- ♦ Evaluate the integrated care received by patients with infections, coinfecting patients, and therapeutic considerations
- ♦ Consider other anti-tuberculosis treatments in patients with Tuberculosis and HIV/AIDS coinfection



**Module 10. Viral Hemorrhagic Diseases and Arboviruses**

- ♦ Quickly identify viral hemorrhagic diseases and the vaccines available for these diseases
- ♦ Understand the diagnostic approach to viral hemorrhagic diseases
- ♦ Distinguish the symptoms and pathologies of different types of viral diseases

**Module 12. Central Nervous System Infections**

- ♦ Quickly identify the immune defense mechanisms of the CNS, as well as the epidemiology of infections affecting it
- ♦ Diagnose potential microbes causing infections in the CNS through cerebrospinal fluid analysis
- ♦ Identify the basic CNS infections through their most relevant characteristics, such as etiology and clinical presentation, while establishing a correct diagnosis and treatment plan
- ♦ Gain a clear understanding of antibiotics and how the blood-brain barrier functions

**Module 13. Zoonosis**

- ♦ Learn about the general aspects of zoonoses, such as their origin and prionic causes
- ♦ Analyze the primary control measures for zoonoses of concern to global public health systems
- ♦ Establish a clear diagnostic picture for some animal-borne infections, including their treatment and clinical presentation
- ♦ Understand the protocol for managing zoonotic diseases

**Module 14. Mycobacteriosis and Anaerobic Infections**

- ♦ Acquire the necessary skills to analyze the microbiological characteristics of mycobacteria
- ♦ Analyze microbiological methods for diagnosing mycobacterial infections
- ♦ Understand and identify the symptoms, infectious agents, and clinical presentation of mycobacterial infections
- ♦ Study in detail the main antimicrobials used against anaerobic germs

**Module 15. Mycosis and Parasitosis in Infectious Diseases**

- ♦ Identify the etiology of the most common mycosis infections
- ♦ Understand in detail the general aspects of parasitic infections, including the immune response to parasites, protozoa, and helminths
- ♦ Correctly manage different direct and indirect diagnostic methods for mycoses
- ♦ Know the latest updates on antiparasitics and their pharmacological elements

**Module 16. Multidrug Resistance and Vaccines**

- ♦ Identify the acquired genetic mechanisms causing antimicrobial resistance
- ♦ Delve into various infections that have developed resistance to antivirals
- ♦ Understand the general aspects of vaccination, including its immunological basis, production process, and the risks for individuals
- ♦ Establish the correct method for vaccine use

# 05 Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.



“

*TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”*

## The student: the priority of all TECH programs

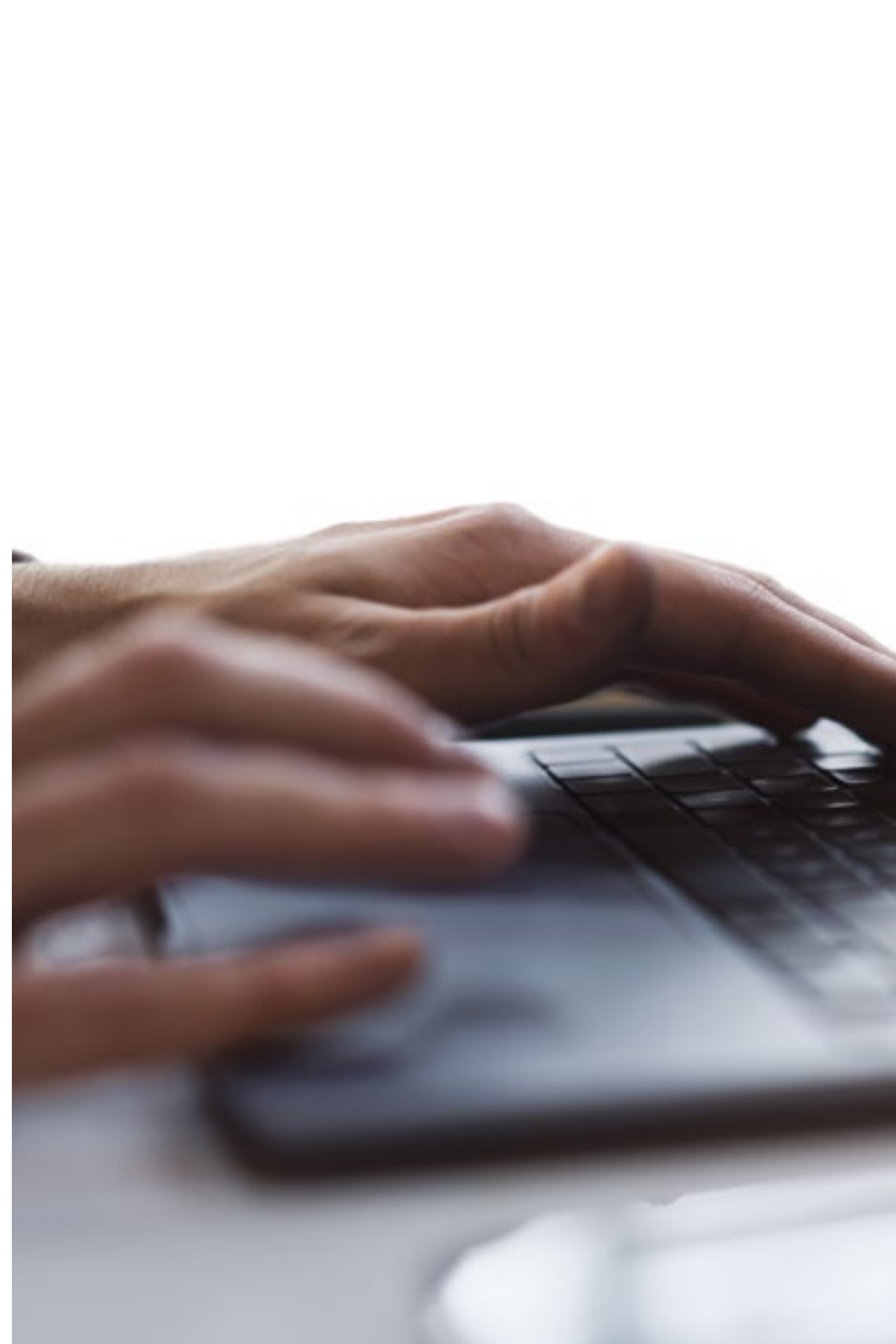
In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

“

*At TECH you will NOT have live classes  
(which you might not be able to attend)”*





### The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

“*TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want*”

## Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.





## Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

*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.*



## A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



*The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule"*

### 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 assess 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.

### The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

*Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.*

*You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.*



As such, the best educational materials, thoroughly prepared, will be available in this program:



#### 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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



#### Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



#### Interactive Summaries

We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

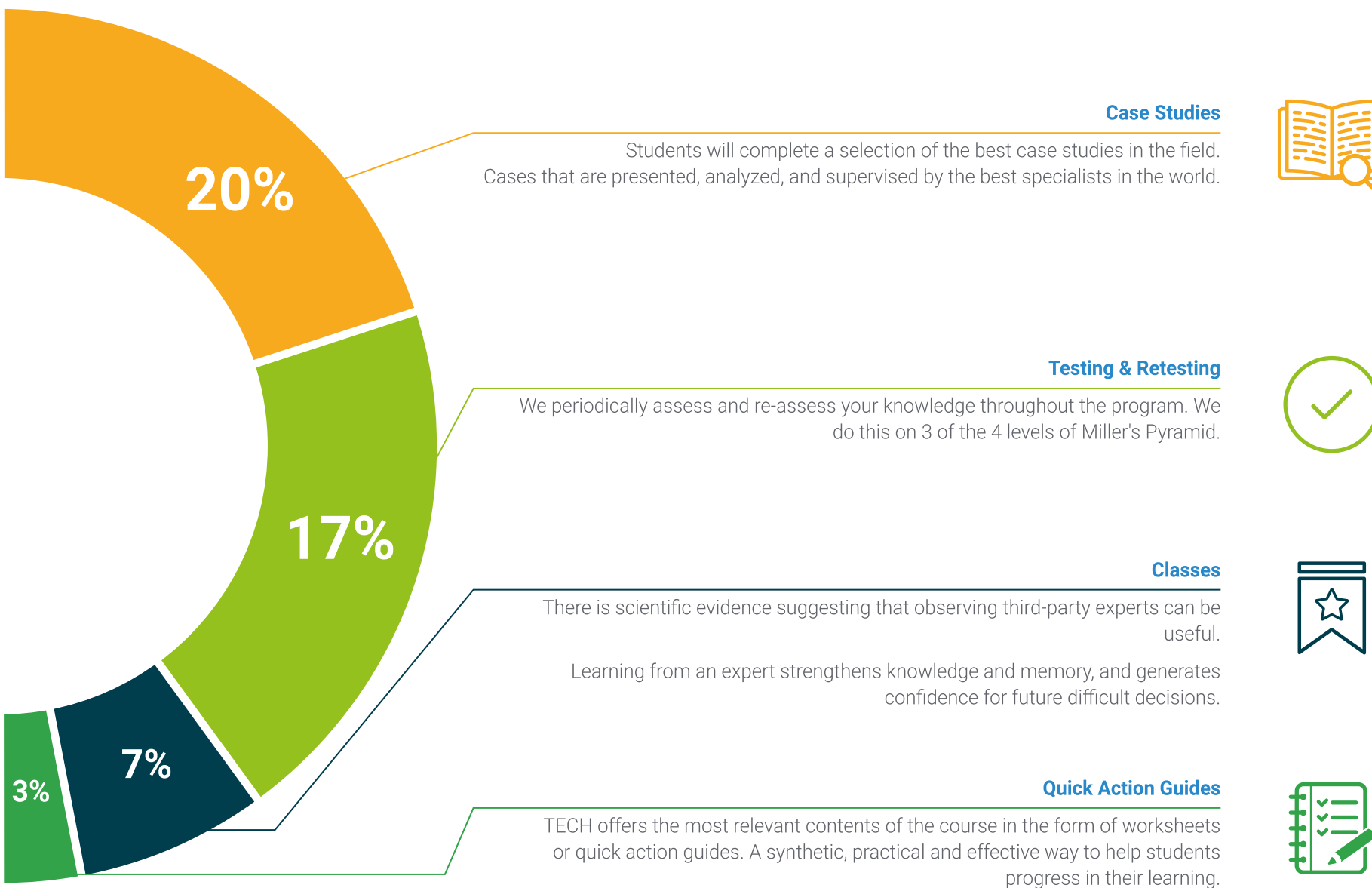
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.







06

# Teaching Staff

This Professional Master's Degree offers you the opportunity to be educated by internationally renowned professionals with a solid track record in hospitals and research centers. With years of experience in treating infectious diseases and successful cases in the implementation of Advanced Antibiotic Therapies, our instructors share their practical knowledge and effective strategies to tackle the most complex challenges in infectiology. In this way, you will be prepared to face clinical challenges with a cutting-edge and up-to-date approach.





“

*Update your knowledge with the expertise  
and competence of a faculty team  
specialized in addressing Infectious  
Diseases”*

## Guest Director



### Dr. Díaz Pollán, Beatriz

- Specialist in internal medicine with experience in infectious diseases
- Area Specialist, Department of Internal Medicine, Infectious Diseases Unit, La Paz University Hospital
- Associate Physician, Department of Internal Medicine, Infectious Diseases Unit, San Carlos Hospital
- Associate Researcher in several research projects
- Author of dozens of scientific articles on Infectious Diseases
- Master's Degree in Infectious Diseases and Antimicrobial Therapy from CEU Cardenal Herrera University
- Specialist in community and non-transmissible infections from the CEU Cardenal Herrera University
- Specialist in Infectious Diseases and Chronic and Infectious Diseases Diseases from CEU Cardenal Herrera University.
- Member of the Spanish Society of Infectious Diseases and Clinical Microbiology

## Teachers

### Dr. Rico Nieto, Alicia

- Microbiology and Parasitology Specialist and Infectious Diseases Expert
- Assistant Physician, Infectious Diseases Unit, La Paz University Hospital, Madrid
- Specialist in Microbiology at La Paz University Hospital, Madrid
- Researcher at the Research Institute of the La Paz University Hospital, Madrid
- Author of numerous scientific publications
- Member of the Board of Directors of the Osteoarticular Infection Study Group and the Spanish Society of Infectious Diseases and Clinical Microbiology

### Dr. Loeches Yagüe, María Belén

- Assistant Physician, Infectious Diseases Unit, Department of Infectious Diseases, La Paz General University Hospital, Madrid
- PhD in Medicine from the Autonomous University of Madrid
- Bachelor's in Medicine from Complutense University of Madrid
- Master in Theoretical and Practical Learning in Infectious Diseases from the Complutense University of Madrid
- Specialized training in Microbiology and Infectious Diseases, Gregorio Marañón General University Hospital,
- Professor of Infectious Diseases, Infanta Sofía University Hospital, Madrid

**Dr. Arribas López, José Ramón**

- ♦ Section Chief of the Infectious Diseases and Clinical Microbiology Unit of the Internal Medicine Department of La Paz University Hospital
- ♦ Coordinator of the High Level Isolation Unit at La Paz - Carlos III Hospital
- ♦ Director of the the Research Institute of La Paz University Hospital (IdiPAZ)
- ♦ Director of La Paz University Hospital's Foundation
- ♦ Doctor in the Infectious Diseases Unit at Barnes Hospital in the USA
- ♦ Doctor of Medicine, UAM
- ♦ Member of the Inter-Ministerial Committee for the Management of the Ebola Crisis

**Dr. Branches Ramos, Juan Carlos**

- ♦ Internal Medicine Specialist
- ♦ Assistant Physician, Infectious Diseases Unit, La Paz University Hospital, Madrid
- ♦ Intern at the University Hospital Sanitas La Zarzuela Madrid.
- ♦ PhD in Medicine and Surgery from the University of Alcalá de Henares
- ♦ Master in Infectious Diseases in Intensive Care by the University-Business Foundation of the University of Valencia

**Dr. Mora Rillo, Marta**

- ♦ Specialist in Internal Medicine at the La Paz University Hospital, Madrid
- ♦ Clinical Researcher in Infectious Diseases
- ♦ Author of various scientific articles on Infectious Diseases
- ♦ Collaborating Teacher in university studies of Medicine
- ♦ PhD in Medicine from the Autonomous University of Madrid
- ♦ Master's Degree in Infectious Diseases in Intensive Care by the University of Valencia
- ♦ Master's Degree in Tropical and Health Medicine, Autonomous University of Madrid
- ♦ Expert in Emerging and High Risk Virus Pathology, Autonomous University of Madrid

# 07 Certificate

The Professional Master's Degree in Clinical Infectious Diseases and Advanced Antibiotic Therapeutics guarantees students, in addition to the most rigorous and up-to-date education, access to a diploma for the Professional Master's Degree issued by TECH Global University.





“

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

This private qualification will allow you to obtain a **Professional Master's Degree in Clinical Infectious Diseases and Advanced Antibiotic Therapeutics** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

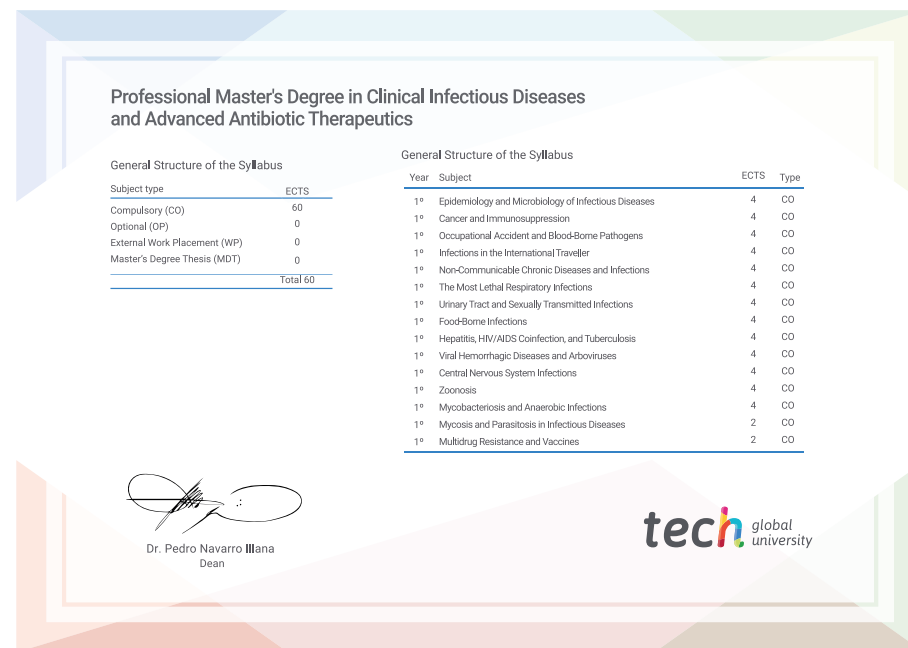
This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Professional Master's Degree in Clinical Infectious Diseases and Advanced Antibiotic Therapeutics**

Modality: **online**

Duration: **12 months.**

Accreditation: **60 ECTS**







**Professional Master's Degree**  
Clinical Infectious Diseases and  
Advanced Antibiotic Therapeutics

- » Modality: Online
- » Duration: 12 months.
- » Certificate: TECH Global University
- » Accreditation: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

# Professional Master's Degree

## Clinical Infectious Diseases and Advanced Antibiotic Therapeutics