# Postgraduate Diploma

Zoonosis and Parasitosis





# Postgraduate Diploma

Zoonosis and Parasitosis

» Modality: online

» Duration: 6 months

» Certificate: TECH Technological University

» Dedication: 16h/week

» Schedule: at your own pace

» Exams: online

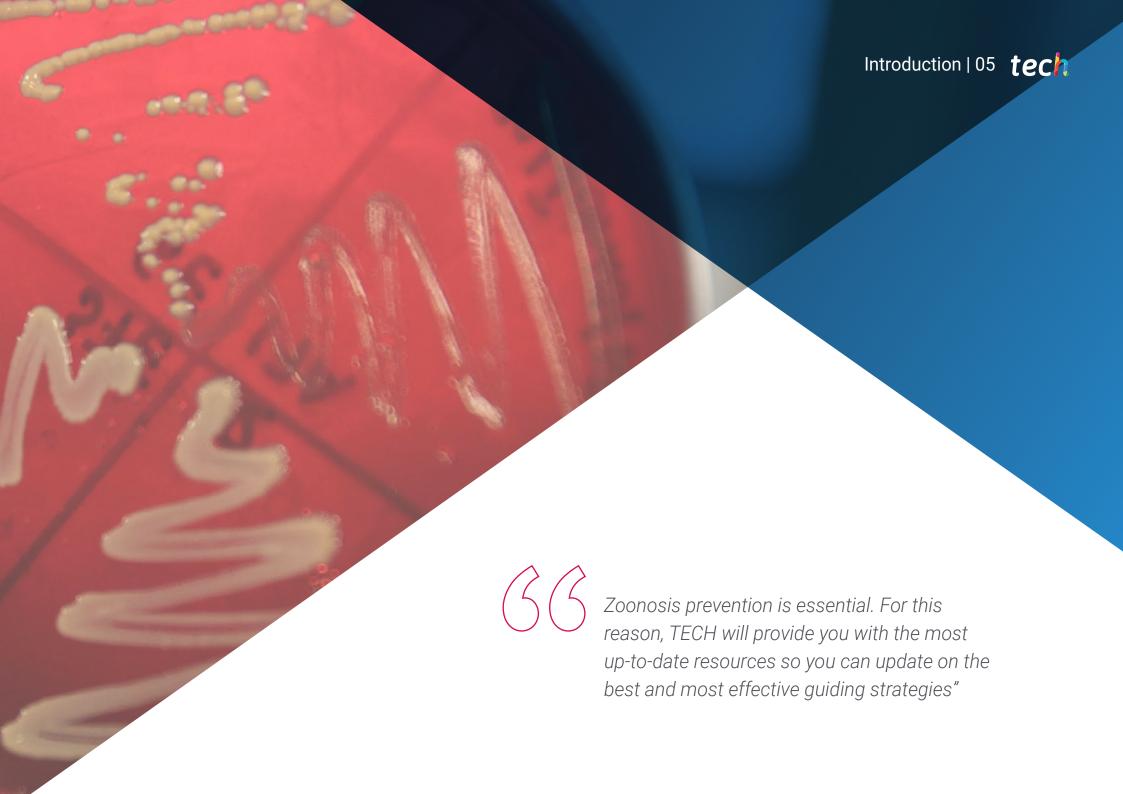
Website: www.techtitute.com/pk/medicine/postgraduate-diploma/postgraduate-diploma-zoonosis-parasitosis

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# tech 06 | Introduction

Though HIV has mutated into human-exclusive strains when lodged in the organism, it has a zoonotic origin. According to research, this virus, which has caused the death of more than 39 million people worldwide, originated in chimpanzees in Africa, but humanape contact led to its subsequent pandemic. Although yet to be eradicated, it has nevertheless been kept under control through therapeutic treatments and, especially, prevention. The unconventional aspect of the pathogens that cause zoonotic diseases can derive in devastating consequences to various systems in the human body, which can specifically result in immunodeficiency that can then lead to the proliferation of other parasites.

In this context, medical professionals not only play a fundamental role in clinically treating these infections, but also act as agents of prevention by means of providing guidance and effective communication. TECH has developed a complete program that is perfect to bring specialists up to date on the latest developments in zoonotic and parasitic pathologies, including the most effective and innovative preventive, diagnostic and therapeutic strategies to date. A 6-month academic experience for our students to delve into the latest advances in the epidemiology of infectious diseases, focusing on zoonosis and mycosis. They will also be able to update their knowledge of multiresistance and vaccines, and conduct an in-depth review of rare pathologies and the current challenges in the specialty of infectious diseases.

To that end, students will benefit from 500 hours of theoretical, practical and additional material, presented in different formats: detailed videos, research articles, complementary readings, self-knowledge exercises, case studies, frequently asked questions, and dynamic summaries of each unit. Everything will be available on the Virtual Campus from the beginning of the academic experience, and can be downloaded to any device with an internet connection as a reference, even after the course has concluded and even if you do not have access to the Internet. So, TECH offers its students a flexible, convenient and complete course, perfect for medical specialists to catch up while they continue fulfilling their professional obligations.

The **Postgraduate Diploma in Zoonosis and Parasitosis** contains the most complete and up-to-date scientific program on the market. The most important features include:

- Case studies presented by experts in infectious diseases in clinical practice
- 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
- 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 comprehensive and dynamic program that will guide your knowledge update on the epidemiology of infectious diseases in current clinical practice"

# Introduction | 07 tech



Thanks to its convenient and flexible 100% online format, you will delve into the various aspects of Zoonosis and Parasitosis from wherever you want, completely tailoring the schedule to your needs"

The program's teaching staff includes professionals from the sector who contribute their work experience to this educational 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 education programmed to learn in real situations.

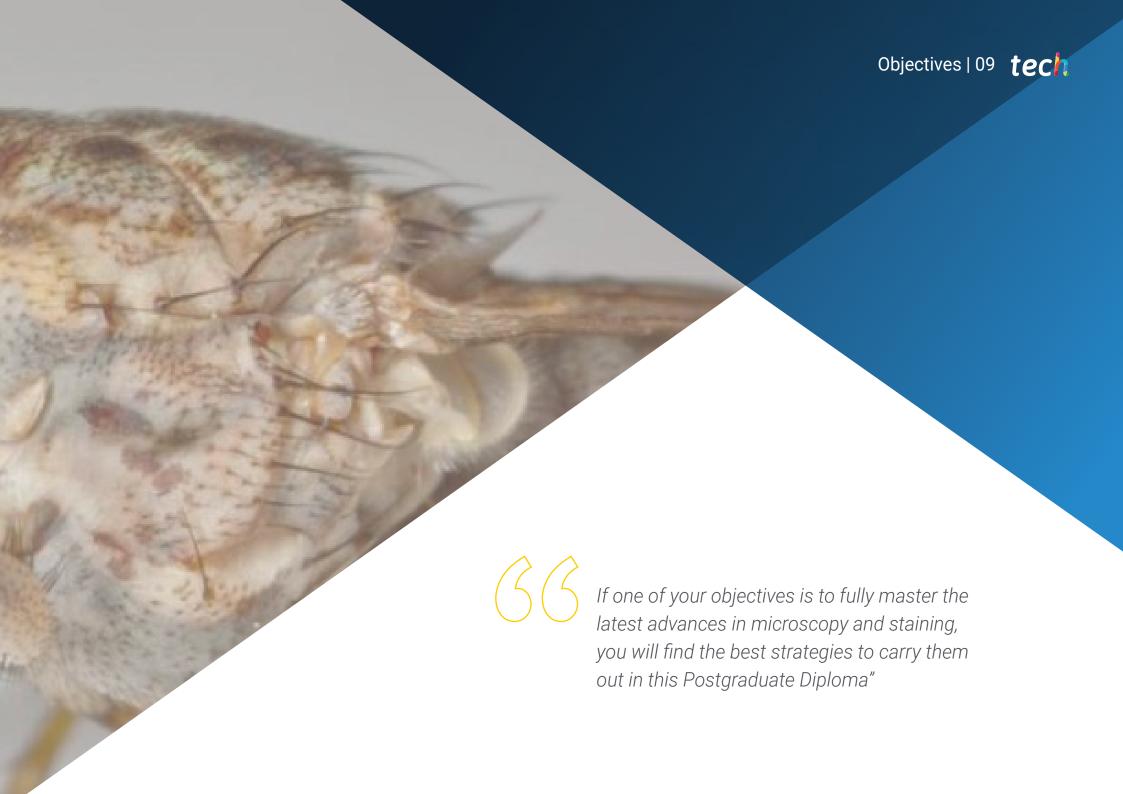
This program is designed around Problem-Based Learning, whereby students must try to solve the different professional practice situations that arise during the academic year. To that end, they will be assisted by an innovative, interactive video system created by renowned and experienced experts.

You will have access to 500 hours of diverse material, including the most dynamic and innovative audiovisual content, which will help you contextualize the information in the syllabus.

You will work intensively on the latest developments in mycosis and parasitosis in the specialty of infectious diseases, focusing on diagnostic advances and the most effective pharmacological treatments to date.







# tech 10 | Objectives

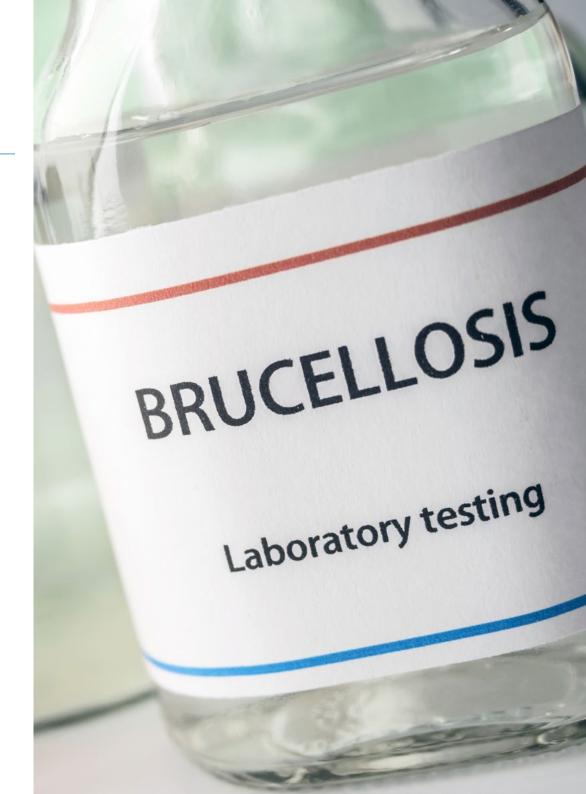


# **General Objectives**

- Provide a knowledge update on the latest and most exhaustive information on Zoonosis and Parasitosis
- Cover the most cutting-edge and effective clinical strategies for the diagnosis, therapeutic treatment and prevention of the various viral diseases transmitted from animals to humans



If you are looking for a program with the most cutting-edge and accurate information on rabies, avian influenza, leptospirosis and the rest of the most frequent zoonotic diseases, this course is perfect for you"





## Module 1. Epidemiology of Infectious Diseases

- Know the epidemiological, economic, social and political conditions of countries with major infectious diseases
- Identify the different taxonomies of infectious agents, as well as the properties of microorganisms
- Gain in-depth knowledge of chemical and physical agents in microorganisms
- Know the indications and interpretations of a microbiological study, understanding all the technical aspects

#### Module 2. Zoonosis

- Understand generalities of zoonoses such as their origin and prion causes
- Identify and analyze the main measures to control the most concerning zoonoses worldwide
- Establish an accurate diagnostic picture of some of the infections transmitted by animals, as well as their treatments and clinical pictures

## Module 3. Mycoses and Parasitosis in Clinical Practice

- Identify the etiology of the most common mycosis infections
- Gain a detailed understanding of the generalities of parasitosis, and the body's immune response to parasites, protozoa and helminths
- Correctly manage the various direct and indirect diagnostic methods for mycoses
- Know the latest updates on antiparasitics and their pharmacological components

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

- Identify the acquired genetic mechanisms that lead to antimicrobial resistance
- Further understanding of 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

## Module 5. Rare Infectious Diseases and Other Challenges in Clinical Practice

- Know the general aspects of the most common infectious diseases in the world
- Identify the etiology, clinical picture and diagnosis of the most common diseases in the world
- Develop the skills required to identify new emerging infectious diseases and the development of new antibiotics





# tech 14 | Course Management

# Management



# Dr. Díaz Pollán, Beatriz

- Specialist in the area of Infectious Diseases at La Paz University Hospita
- Master's Degree in Infectious Diseases and Antimicrobial Treatment from CEU Cardenal Herrera University.
- University Expert in community and nosocomial infections from the CEU Cardenal Herrera University
- University Expert in Microbiological Diagnosis, Antimicrobial Treatment and Research in Infectious Pathology from CEU Cardenal Herrera University
- University Expert in chronic infectious pathologies and imported infections from CEU Cardenal Herrera University
- Degree in Medicine and Surgery from the Autonomous University of Madrid.

## **Professors**

## Dr. Rico, Alicia

- Specialist in the Microbiology and Parasitology Department at La Paz University Hospital
- Assistant and co-founder of the Infectious Diseases and Clinical Microbiology Unit.
   La Paz University Hospital. Madrid
- \* Team Member of PROA (Programs of reinforcement, Orientation and Support)
- Clinical teaching collaborator. Department of Medicine, UAM
- Member of the Infections and Policy Committee. La Paz Hopistal
- Doctorate, Complutense University of Madrid
- Degree in Medicine from the Complutense University of Madrid.

## Dr. Loeches Yagüe, María Belén

- \* Specialist in the area of Infectious Diseases at La Paz General University Hospital
- Doctorate in Medicine from the Autonomous University Madrid
- Degree in Medicine from the Complutense University of Madrid.
- Master's Degree in Theoretical and Practical Learning in Infectious Diseases
- Specialised Training in Microbiology and Infectious Diseases
- Professor of Infectious Diseases, Infanta Sofía University Hospital, Madrid

## Dr. Ramos, Juan Carlos

- Doctor at La Paz University Hospital
- Doctorate in Medicine, University of Alcala
- Degree in Medicine and Surgery from the Complutense University of Madrid
- Master's Degree in Infectious Diseases in Intensive Care from the Fundación Universidad-Empresa Valencia.
- Author of Several Scientific Publications

## Dr. Arribas López, José Ramón

- Department Head of the Infectious Diseases and Clinical Microbiology Unit at the Hospital Universitario La Paz.
- Coordinator of the High-Level Isolation Unit at the Hospital 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
- Doctorate in Medicine from the Autonomous University Madrid
- Degree in Medicine and Surgery from the Complutense University of Madrid

#### Dr. Mora Rillo, Marta

- Specialist in the area of Infectious Diseases at La Paz University
- Clinical Teaching Collaborator in the Department of Medicine. Autonomous University of Madrid
- Doctorate in Medicine from the Autonomous University Madrid
- Degree in Medicine and Surgery from the University of Zaragoza
- Master's Degree in Infectious Diseases in Intensive Care by the University of Valencia
- Online Master in Infectious Diseases and antimicrobial treatment by CEU Cardenal Herrera University.
- Master's Degree in Tropical and Health Medicine, Autonomous University of Madrid
- Postgraduate Diploma in Emerging and High-Risk Virus Pathology, Autonomous University of Madrid
- Expert in Tropical Medicine from the Autonomous University Madrid





# tech 18 | Structure and Content

## Module 1. Epidemiology of Infectious Diseases

- 1.1. Epidemiological, Economic and Social Conditions by Continent that Favor the Emergence 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. Morbidity and Mortality from Infectious Disease in Asia
  - 1.2.4. Morbidity and Mortality from Infectious Diseases in Europe
- 1.3. The Taxonomy of Infectious Agents
  - 1.3.1. Viruses
  - 132 Bacteria
  - 1.3.3. Fungi
  - 1.3.4. Parasites
- 1.4. Properties in Microorganisms that Cause Disease
  - 1.4.1. Pathogenic Mechanisms
  - 1.4.2. Adhesion and Multiplication Mechanisms
  - 1.4.3. Mechanisms that Enable Nutrient Acquisition from Hosts
  - 1.4.4. Mechanisms that Inhibit Phagocytic Processes
  - 1.4.5. Mechanisms that Circumvent Immune Responses
- 1.5. Microscopy and Staining
  - 1.5.1. Microscopes and Types of Microscopes
  - 1.5.2. Composite Stains
  - 1.5.3. Acid-Fast Microorganism Stains
  - 1.5.4. Stains for Cellular Structures
- 1.6. Microorganism Cultures and Growth
  - 1.6.1. General Culture Methods
  - 1.6.2. Specific Culture Methods
- 1.7. Effect of Chemical and Physical Agents on Microorganisms
  - 1.7.1. Sterilisation and Disinfection
  - 1.7.2. Disinfectants and Antiseptics Used in Practice

- 1.8. Molecular Biology and Its Relevance to Infectious Disease Specialists
  - 1.8.1. Bacterial Genetics
  - 1.8.2. Polymerase Chain Reaction Tests
- 1.9. Indication and Interpretation of Microbiological Studies

### Module 2. Zoonosis

- 2.1. Overview of Zoonosis
  - 2.1.1. General Concepts and Epidemiology of Zoonosis
  - 2.1.2. Main Zoonotic Diseases on an International Level
  - 2.1.3. Zoonotic Prion Diseases
  - 2.1.4. Prions in the Aetiology of Diseases
  - 2.1.5. Bovine Spongiform Encephalopathy (or Mad Cow Disease)
  - 2.1.6. Main Zoonosis Control Measures
- 2.2. Rabies
  - 2.2.1. Epidemiology
  - 2.2.2. Infectious Agents
  - 2.2.3. Pathobiology
  - 2.2.4. Clinical Picture
  - 2.2.5. Diagnosis
  - 2.2.6. Treatment
- 2.3. Bird Flue
  - 2.3.1. Epidemiology
  - 2.3.2. Infectious Agents
  - 2.3.3. Pathobiology
  - 2.3.4. Clinical Picture
  - 2.3.5. Diagnosis
  - 2.3.6. Treatment
- 2.4. Leptospirosis
  - 2.4.1. Epidemiology
  - 2.4.2. Infectious Agents
  - 2.4.3. Pathobiology
  - 2.4.4. Clinical Picture
  - 2.4.5. Diagnosis
  - 2.4.6. Treatment



# Structure and Content | 19 tech

- 2.5. Brucellosis
  - 2.5.1. Epidemiology
  - 2.5.2. Infectious Agents
  - 2.5.3. Pathobiology
  - 2.5.4. Clinical Picture
  - 2.5.5. Diagnosis
  - 2.5.6. Treatment
- 2.6. Toxoplasmosis
  - 2.6.1. Epidemiology
  - 2.6.2. Infectious Agents
  - 2.6.3. Pathobiology
  - 2.6.4. Clinical Picture
  - 2.6.5. Diagnosis
  - 2.6.6. Treatment

# Module 3. Mycoses and Parasitosis in Clinical Practice

- 3.1. General Information on Fungi
  - 3.1.1. General Features of Fungi
  - 3.1.2. Immune Response to Fungi
- 3.2. Diagnostic Methods for Mycoses
  - 3.2.1. Direct Methods
  - 3.2.2. Indirect Methods
- 3.3. Superficial Mycosis: Tinea and Epidermatophytosis
  - 3.3.1. Definition
  - 3.3.2. Etiology
  - 3.3.3. Clinical Picture
  - 3.3.4. Diagnosis
  - 3.3.5. Treatment
- .4. Deep Mycosis
  - 3.4.1. Cryptococcosis
  - 3.4.2. Histoplasmosis
  - 3.4.3. Aspergillosis
  - 3.4.4. Other Mycoses

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3.5.	Update on Antifungals	
	3.5.1.	Pharmacological Elements
	3.5.2.	Clinical Use
3.6.	General Overview of Parasitosis	
	3.6.1.	General Features of Microbiological Parasites
	3.6.2.	Immune Response to Parasites
	3.6.3.	Immune Response to Protozoa
	3.6.4.	Immune Response to Helminths
3.7.	Diagnostic Methods for Parasites	
	3.7.1.	Diagnostic Methods for Protozoa
	3.7.2.	Diagnostic Methods for Helminths
3.8.	Intestinal Parasites	
	3.8.1.	Ascariasis
	3.8.2.	Oxiuriasis
	3.8.3.	Hookworm Disease and Necatoriasis
	3.8.4.	Trichuriasis
3.9.	Tissue Parasitosis	
	3.9.1.	Malaria
	3.9.2.	Trypanosomiasis
	3.9.3.	Schistosomiasis
	3.9.4.	Leishmaniasis
	3.9.5.	Filariasis
3.10.	Update on Antiparasitics	
	3.10.1.	Pharmacological Elements
	3.10.2.	Clinical Use

## 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
- 4.8. 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
- 4.9. 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

# **Module 5.** Rare Infectious Diseases and Other Challenges in Clinical Practice

- 5.1. Overview of Rare Infectious Diseases
  - 5.1.1. General Concepts
  - 5.1.2. Epidemiology of Rare or Uncommon Infectious Diseases
- 5.2. Bubonic Plague
  - 5.2.1. Definition
  - 5.2.2. Etiology
  - 5.2.3. Clinical Picture
  - 5.2.4. Diagnosis
  - 5.2.5. Treatment
- 5.3. Lyme Disease
  - 5.3.1. Definition
  - 5.3.2. Etiology
  - 5.3.3. Clinical Picture
  - 5.3.4. Diagnosis
  - 5.3.5. Treatment
- 5.4. Babesiosis
  - 5.4.1. Definition
  - 5.4.2. Etiology
  - 5.4.3. Clinical Picture
  - 5.4.4. Diagnosis
  - 5.4.5. Treatment
- 5.5. Rift Valley Fever
  - 5.5.1. Definition
  - 5.5.2. Etiology
  - 5.5.3. Clinical Picture
  - 5.5.4. Diagnosis
  - 5.5.5. Treatment
- 5.6. Diphyllobothriasis
  - 5.6.1. Definition
  - 5.6.2. Etiology
  - 5.6.3. Clinical Picture
  - 5.6.4. Diagnosis
  - 5.6.5. Treatment

- 5.7. Zygomycosis
  - 5.7.1. Definition
  - 5.7.2. Etiology
  - 5.7.3. Clinical Picture
  - 5.7.4. Diagnosis
  - 5.7.5. Treatment
- 5.8. Cysticercosis
  - 5.8.1. Definition
  - 5.8.2. Etiology
  - 5.8.3. Clinical Picture
  - 5.8.4. Diagnosis
  - 5.8.5. Treatment
- 5.9. Kuru
  - 5.9.1. Definition
  - 5.9.2. Etiology
  - 5.9.3. Clinical Picture
  - 5.9.4. Diagnosis
  - 5.9.5. Treatment
- 5.10. Re-emerging Diseases: Causes and Effects
  - 5.10.1. Emerging and New Infectious Diseases that Demand New Approaches to Control Them
  - 5.10.2. The Rise of Microbiological Resistance to Antimicrobial Drugs
  - 5.10.3. Development of New Antibiotics



A program of the highest level for you to not only update on antiparasitics and multi-resistance, but to learn to implement the most effective preventive strategies in current clinical practice"





# tech 24 | Methodology

### At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.



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:

- 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.



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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.

# tech 28 | Methodology

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.









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This **Postgraduate Diploma in Zoonosis and Parasitosis** 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 Diploma in Zoonosis and Parasitosis

Official No of hours: 500 h.



<sup>\*</sup>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.

health confidence people information tutors guarantee accreditation teaching technology learning community community



# Postgraduate Diploma Zoonosis and Parasitosis

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