



## Postgraduate Diploma

Viral Hemorrhagic Fevers, Arbovirosis and Zoonosis

Course Modality: Online
Duration: 6 months

Certificate: TECH Technological University

Official No of hours: 450 h.

Website: www.techtitute.com/pk/medicine/postgraduate-diploma/postgraduate-diploma-viral-hemorrhagic-fevers-arbovirosis-zoonosis

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### tech 06 | Introduction

Arboviruses, zoonoses or viral hemorrhagic fevers comprise a wide range of diseases: rabies, tuberculosis, tick-borne encephalitis, dengue fever, filaria, etc. This group of viral pathologies causes millions of deaths every year around the world and its resistance to the environment has favored the mutation of the microorganisms that cause them, making their eradication difficult and forcing specialists to constantly establish new diagnostic and therapeutic guidelines to help patients recover their health and avoid potential sequelae.

In this context, medical professionals, in addition to playing a major role in health care, are forced to constantly update their knowledge in this regard, which sometimes becomes complicated due to lack of time and the speed with which new treatments and clinical guidelines emerge. For this reason, and as a manifesto of TECH's commitment to this field, it has developed a complete program that includes the latest news on hemorrhagic viral fevers, arbovirosis and zoonosis in a convenient 100% online format. Over six months, our students will be able to delve into the latest advances in epidemiology, focusing on the most effective protocols and approaches used in clinical settings. They will intensively work through updated knowledge of rare diseases and present challenges in infectious diseases, so they can incorporate into their practice the most accurate and innovative diagnostic techniques in current clinical contexts.

For this purpose, they will benefit from 450 hours of diverse content designed by experts in microbiology, medicine and infectious diseases, who are also part of the teaching team that will guide them throughout this academic experience. This material includes detailed videos, research articles and complementary readings so students can contextualize the information in the syllabus and personalize their study of each section. Our students will thus be able to hone their skills while balancing the program with their work by designing their own study timetable according to their clinical schedule.

This **Postgraduate Diploma in Viral Hemorrhagic Fevers, Arbovirosis and Zoonosis** 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



You will be able to update your knowledge of the epidemiology of infectious diseases throughout 450 hours of the best theoretical, practical and additional content"



If you are interested in learning about the latest clinical evidence for the diagnosis and treatments of different zoonotic diseases, this program contains the latest information for you to do just that"

The program's teaching staff includes professionals from sector who contribute their work experience to this 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.

This program adapts to you: You will have unlimited access to the Virtual Campus through any device with an Internet connection. No fixed schedules or face-to-face classes.

The best program in the current academic market to delve into the latest advances in molecular biology and its importance for the advancement of medicine.







# tech 10 | Objectives



### **General objectives**

- Update knowledge through the latest and most exhaustive information on viral hemorrhagic fevers, arbovirosis and zoonosis
- Provide the most innovative and specialized clinical strategies to manage this type of patients using the most effective protocol guidelines to date



Zika, Dengue, Chukungunya... You will learn about the latest developments in diagnosis and treatment, and preventive guidelines to avoid the uncontrolled spread of contagions"





#### 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. Viral Hemorrhagic Fevers and Arboviruses

- Quickly identify viral hemorrhagic fevers and the vaccines that target these diseases
- Understand the diagnostic approach to hemorrhagic fevers
- Gain an overview of the types of hemorrhagic fevers that concern the world, such as dengue, chikungunya, zika, among others

#### Module 3. Zoonotic

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

#### Module 4. 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
- 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 from the 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
  - 1.3.2. 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. Viral Hemorrhagic Fevers and Arboviruses

- 2.1. Viral Hemorrhagic Fevers
  - 2.1.1. Epidemiology
  - 2.1.2. Classification
  - 2.1.3. Diagnostic Approach to Viral Hemorrhagic Fevers
  - 2.1.4. Vaccine Development for New Diseases
  - 2.1.5. Measures to Control Viral Hemorrhagic Fevers
- 2.2. Hemorrhagic Fever Caused by Ebola
  - 2.2.1. Characteristics and Replicative Cycle of the Virus
  - 2.2.2. Clinical Picture
  - 2.2.3. Diagnosis
  - 2.2.4. Treatment
- 2.3. South American Hemorrhagic Fevers
  - 2.3.1. Characteristics and Replicative Cycle of the Virus
  - 2.3.2. Clinical Picture
  - 2.3.3. Diagnosis
  - 2.3.4. Treatment



# Structure and Content | 19 tech

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- 2.4.1. Epidemiology
- 2.4.2. Vector Control
- 2.4.3. Other Arboviroses

#### 2.5. Yellow Fever

- 2.5.1. Concept
- 2.5.2. Replicative Cycle of the Virus
- 2.5.3. Clinical Manifestations
- 2.5.4. Diagnosis
- 2.5.5. Treatment

#### 2.6. Dengue

- 2.6.1. Concept
- 2.6.2. Replicative Cycle of the Virus
- 2.6.3. Clinical Manifestations
- 2.6.4. Diagnosis
- 2.6.5. Treatment

#### 2.7. Chikungunya

- 2.7.1. Concept
- 2.7.2. Replicative Cycle of the Virus
- 2.7.3. Clinical Manifestations
- 2.7.4. Diagnosis
- 2.7.5. Treatment

#### 2.8. Zika

- 2.8.1. Concept
- 2.8.2. Replicative Cycle of the Virus
- 2.8.3. Clinical Manifestations
- 2.8.4. Diagnosis
- 2.8.5. Treatment

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#### Module 3. Zoonosis

- 3.1. Overview of Zoonosis
  - 3.1.1. General Concepts and Epidemiology of Zoonosis
  - 3.1.2. Main Zoonotic Diseases on an International Level
  - 3.1.3. Zoonotic Prion Diseases
  - 3.1.4. Prions in the Aetiology of Diseases
  - 3.1.5. Bovine Spongiform Encephalopathy (or Mad Cow Disease)
  - 3.1.6. Main Zoonosis Control Measures
- 3.2. Rabies
  - 3.2.1. Epidemiology
  - 3.2.2. Infectious Agents
  - 3.2.3. Pathobiology
  - 3.2.4. Clinical Picture
  - 3.2.5. Diagnosis
  - 3.2.6. Treatment
- 3.3. Bird Flue
  - 3.3.1. Epidemiology
  - 3.3.2. Infectious Agents
  - 3.3.3. Pathobiology
  - 3.3.4. Clinical Picture
  - 3.3.5. Diagnosis
  - 3.3.6. Treatment
- 3.4. Leptospirosis
  - 3.4.1. Epidemiology
  - 3.4.2. Infectious Agents
  - 3.4.3. Pathobiology
  - 3.4.4. Clinical Picture
  - 3.4.5. Diagnosis
  - 3.4.6. Treatment

- 3.5. Brucellosis
  - 3.5.1. Epidemiology
  - 3.5.2. Infectious Agents
  - 3.5.3. Pathobiology
  - 3.5.4. Clinical Picture
  - 3.5.5. Diagnosis
  - 3.5.6. Treatment
- 3.6. Toxoplasmosis
  - 3.6.1. Epidemiology
  - 3.6.2. Infectious Agents
  - 3.6.3. Pathobiology
  - 3.6.4. Clinical Picture
  - 3.6.5. Diagnosis
  - 3.6.6. Treatment

### Module 4. Rare Infectious Diseases and Other Challenges in Clinical

#### Practice

- 4.1. Overview of Rare Infectious Diseases
  - 4.1.1. General Concepts
  - 4.1.2. Epidemiology of Rare or Uncommon Infectious Diseases
- 4.2. Bubonic Plague
  - 4.2.1. Definition
  - 4.2.2. Etiology
  - 4.2.3. Clinical Picture
  - 4.2.4. Diagnosis
  - 4.2.5. Treatment
- 4.3. Lyme Disease
  - 4.3.1. Definition
  - 4.3.2. Etiology
  - 4.3.3. Clinical Picture
  - 4.3.4. Diagnosis
  - 4.3.5. Treatment

### Structure and Content | 21 tech

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- 4.4.1. Definition
- 4.4.2. Etiology
- 4.4.3. Clinical Picture
- 4.4.4. Diagnosis
- 4.4.5. Treatment

#### 4.5. Rift Valley Fever

- 4.5.1. Definition
- 4.5.2. Etiology
- 4.5.3. Clinical Picture
- 4.5.4. Diagnosis
- 4.5.5. Treatment

#### 4.6. Diphyllobothriasis

- 4.6.1. Definition
- 4.6.2. Etiology
- 4.6.3. Clinical Picture
- 4.6.4. Diagnosis
- 4.6.5. Treatment

#### 4.7. Zygomycosis

- 4.7.1. Definition
- 4.7.2. Etiology
- 4.7.3. Clinical Picture
- 4.7.4. Diagnosis
- 4.7.5. Treatment

#### 4.8. Cysticercosis

- 4.8.1. Definition
- 4.8.2. Etiology
- 4.8.3. Clinical Picture
- 4.8.4. Diagnosis
- 4.8.5. Treatment

#### 4.9. Kuru

- 4.9.1. Definition
- 4.9.2. Etiology
- 4.9.3. Clinical Picture
- 4.9.4. Diagnosis
- 4.9.5. Treatment

#### 4.10. Re-emerging Diseases: Causes and Effects

- 4.10.1. Emerging and New Infectious Diseases that Demand New Approaches to Control Them
- 4.10.2. The Rise of Microbiological Resistance to Antimicrobial Drugs
- 4.10.3. Development of New Antibiotics



A qualification that will grant you access to an international medical community thanks to which you will be able to keep up with the most relevant epidemiological matters in different countries around the world"





### 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.



### 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 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**

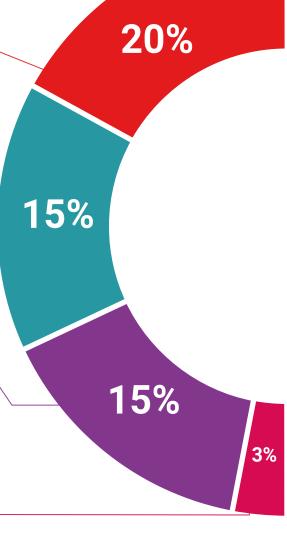
TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many 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.

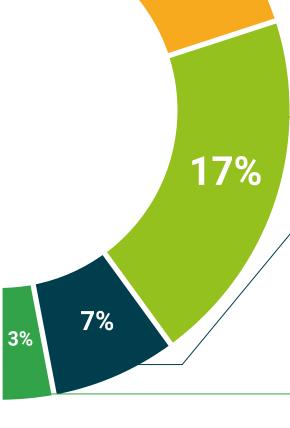
The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



#### **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.









### tech 32 | Certificate

This **Postgraduate Diploma in Viral Hemorrhagic Fevers, Arbovirosis and Zoonosis** 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 Viral Hemorrhagic Fevers, Arbovirosis and Zoonosis
Official N° of hours: 450 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.



# Postgraduate Diploma

Viral Hemorrhagic Fevers, Arbovirosis and Zoonosis

Course Modality: Online Duration: 6 months

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Official No of hours: 450 h.

