



## Postgraduate Diploma Viral, Bacterial and Fungal Infections

» Modality: online

» Duration: 6 months

» Certificate: TECH Technological University

» Dedication: 16h/week

» Schedule: at your own pace

» Exams: online

Website: www.techtitute.com/pk/pharmacy/postgraduate-diploma/postgraduate-diploma-viral-bacterial-fungal-infections

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Certificate

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## tech 6 | Objectives

Infectious diseases are re-emerging as a top priority worldwide, and to meet the needs of the 21st century, health care professionals must have solid knowledge in the field. In addition to the challenge of combating diseases traditionally known among the population, a new challenge is being added: the emergence in recent years of several new diseases with high morbidity, which requires a significant level of updating.

Despite scientific advances in science, public health development and the pharmaceutical and biotechnology industry, there are infectious diseases prevalent throughout the world that continue to have high morbidity and mortality rates, such as pneumonia, infectious diarrhea, urinary tract infections, nosocomial infections, arbovirosis and intestinal parasitism.

To learn how to combat or reduce the effects of infections, experts in this field diseases have created this Postgraduate Diploma, which focuses on the treatment of Viral Bacterial and Fungal Infections. This program aims to provide healthcare professionals with the necessary tools to become specialists in the diagnosis and treatment of this type of infection, which can nowadays occur anywhere in the world.

Therefore, the teaching program brings together the most advanced and in-depth knowledge of the most important health problems in the field of and the treatment, where a group of professors of high scientific rigor and extensive international experience provides the most complete and up-to-date information on this type of diseases.

This **Postgraduate Diploma in Viral, Bacterial and Fungal Infections** contains the most complete and up-to-date educational program on the market. The most important features of the training include:

- Practical cases presented by experts in infectious diseases
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- Practical exercises where the self-assessment process can be carried out to improve learning
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Access to content from any fixed or portable device with an Internet connection



## Objectives | 7 tech



Infectious diseases are one of the major healthcare problems of the 21st century Discover how to treat them with this Postgraduate Diploma offered by TECH to pharmacists"

The program includes in its teaching staff, professionals from the sector who bring to this training the experience of their work, in addition to recognized specialists from prestigious reference societies and universities.

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

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

Thanks to this Postgraduate Diploma you will be able to specialize in viral, bacterial and fungal diseases 100% online and without giving up the rest of your daily activities.

Stand out in the care of your patients with infectious diseases, thanks to this Postgraduate Diploma.







## tech 10 | Objectives



## **General Objectives**

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



Train with us, through this multimedia methodology, and become a professional in the treatment of Viral, Bacterial and Fungal Infections"





### **Specific Objectives**

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

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

#### Module 2. Food-Borne Infections

- Learn about diseases transmitted by the consumption and mishandling of food
- Identify and analyze the classifications of infections caused by improperly handled food
- Evaluate the main etiological agents such as salmonella, staphylococcus, among others
- Understand the socio-economic measures adopted by ATS for the control of foodborne infections

#### Module 3. Viral Haemorrhagic Diseases and Arboviruses

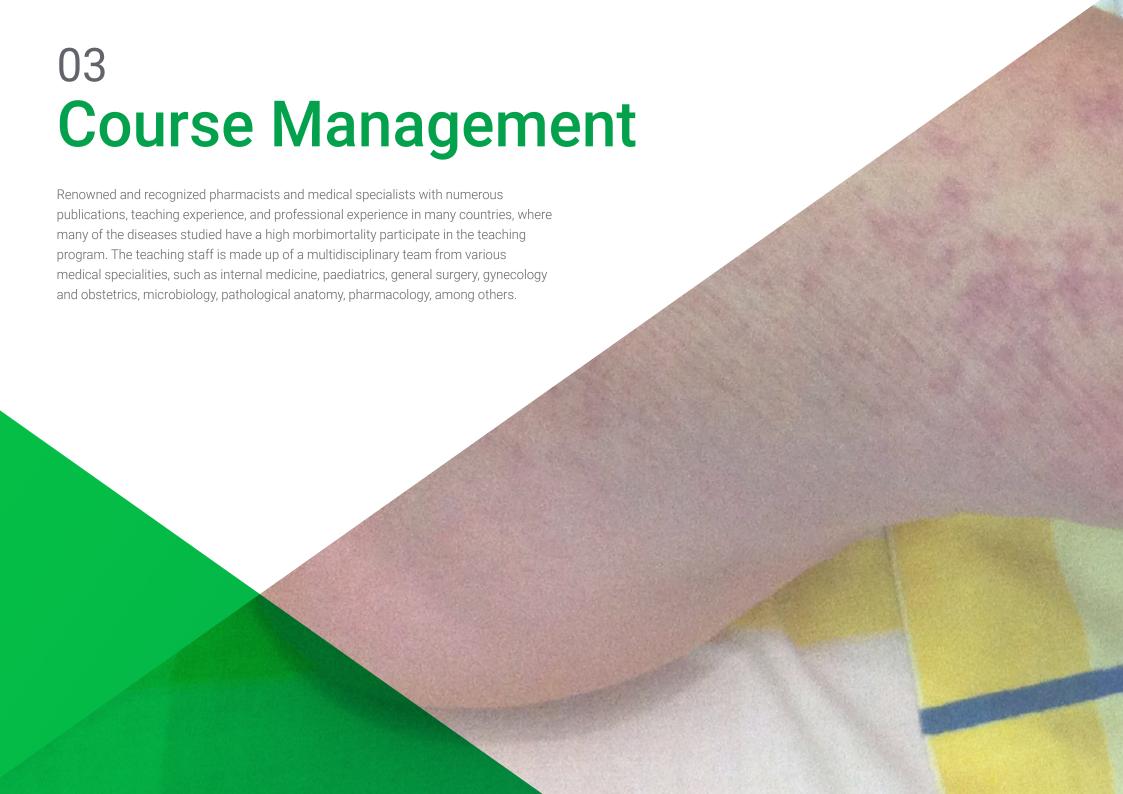
- Quickly identify viral hemorrhagic diseases and the vaccines that target these diseases
- $\bullet\,$  Be able to understand the diagnostic approach to hemorrhagic diseases
- Get an overview of the types of hemorrhagic infections that concern the world, such as Dengue, Chiquingunya, Zika, among others

#### Module 4. Mycobacteriosis and anaerobic infections

- Acquire the necessary skills to analyze the microbiological characteristics of mycobacteria
- Analyze microbiological methods for the diagnosis of microbacterial infections
- Know and identify the symptoms, infectious agents and clinical picture of mycobacterial infections
- Know in detail the main antimicrobial agents against anaerobic germs

#### Module 5. Mycoses and Parasitosis in Infectiology

- Be able to identify the etiology of the most common mycosis infections
- Understand in detail the generalities of parasitosis, as well as the body's immune response to parasites, protozoa and helminths
- Correct management of the different direct and indirect diagnostic methods for mycoses
- Know the latest updates in antiparasitics and their pharmacological elements





## tech 14 | Course Management

#### Management



#### Dr. Díaz Pollán, Beatriz

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

#### **Professors**

#### Dr. Rico, Alicia

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

#### Dr. Ramos, Juan Carlos

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

#### Dr. Loeches Yagüe, María Belén

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

#### Dr. Arribas López, José Ramón

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

#### Dr. Mora Rillo, Marta

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





## tech 18 | Structure and Content

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

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

- 1.7. Effect of Chemical and Physical Agents on Micro-organisms
  - 1.7.1. Sterilisation and Disinfection
  - 1.7.2. Disinfectants and Antiseptics Used in Practice
- 1.8. Molecular Biology and its Importance for the Infectologist
  - 1.8.1. Bacterial Genetics
  - 1.8.2. Polymerase Chain Reaction Tests
- 1.9. Indication and Interpretation of Microbiological Studies

#### Module 2. Food-Borne Infections

- 2.1. Food-Borne Diseases, a Modern Day Health Problem
  - 2.1.1. Epidemiology
  - 2.1.2. Causes of Foodborne Infections
- 2.2. Classification of Foodborne Infections
  - 2.2.1. Intoxications
  - 2.2.2. Infections
  - 2.2.3. Toxi-infections
- 2.3. Main Aetiological Agents
  - 2.3.1. Salmonella
  - 2.3.2. Staphylococci
  - 2.3.3. Listeria monocytogenes
  - 2.3.4. Escherichia coli, 0157;H7
  - 2.3.5. Clostridium botulinum
- 2.4. Foodborne Diseases and their Socio-Economic Impact
  - 2.4.1. Socio-Economic Consequences of the ATS
  - 2.4.2. Main Measures for the Control of Food-Borne Infections
    - 2.4.2.1. Primary Prevention of ATS
    - 2.4.2.2. Education of Health
    - 2.4.2.3. State Health Control and ATS

#### Module 3. Viral Haemorrhagic Diseases and Arboviruses

- 3.1. Viral Hemorrhagic Diseases
  - 3.1.1. Epidemiology
  - 3.1.2. Classification
  - 3.1.3. Diagnostic Approach to Viral Haemorrhagic Diseases
  - 3.1.4. The Development of Vaccines for New Diseases
  - 3.1.5. Measures for the Control of Viral Haemorrhagic Diseases
- 3.2. Ebola Haemorrhagic Fever
  - 3.2.1. Characteristics and Replicative Cycle of the Virus
  - 3.2.2. Clinical Picture
  - 3.2.3. Diagnosis
  - 3.2.4. Treatment
- 3.3. South American Hemorrhagic Fevers
  - 3.3.1. Characteristics and Replicative Cycle of the Virus
  - 3.3.2. Clinical Picture
  - 3.3.3. Diagnosis
  - 3.3.4. Treatment
- 3.4. Arbovirus:
  - 3.4.1. Epidemiology
  - 3.4.2. Vector Control
  - 3.4.3. Other Arboviruses
- 3.5. Yellow Fever.
  - 3.5.1. Concept
  - 3.5.2. Replicative Cycle of the Virus
  - 3.5.3. Clinical manifestations
  - 3.5.4. Diagnosis
  - 3.5.5. Treatment
- 3.6. Dengue.
  - 3.6.1. Concept
  - 3.6.2. Replicative Cycle of the Virus
  - 3.6.3. Clinical manifestations
  - 3.6.4. Diagnosis
  - 3.6.5. Treatment

- 3.7. Chikungunya
  - 3.7.1. Concept
  - 3.7.2. Replicative Cycle of the Virus
  - 3.7.3. Clinical manifestations
  - 3.7.4. Diagnosis
  - 3.7.5. Treatment
- 3.8. Zika
  - 3.8.1. Concept
  - 3.8.2. Replicative Cycle of the Virus
  - 3.8.3. Clinical manifestations
  - 3.8.4. Diagnosis
  - 3.8.5. Treatment

#### Module 4. Mycobacteriosis and anaerobic infections

- 4.1. General Overview of Mycobacteriosis
  - 4.1.1. Microbiological Characteristics of Mycobacteria
  - 4.1.2. Immune Response to Mycobacterial Infection
  - 4.1.3. Epidemiology of Major Nontuberculous Mycobacteria Infections
- 4.2. Microbiological Methods for the Diagnosis of Mycobacterioses
  - 4.2.1. Direct Methods.
  - 4.2.2. Indirect Methods.
- 4.3. Intracellular Mycobacterium Avium Infection
  - 4.3.1. Epidemiology
  - 4.3.2. Infectious Agents
  - 4.3.3. Pathobiology.
  - 4.3.4. Clinical Picture
  - 4.3.5. Diagnosis
  - 4.3.6. Treatment

## tech 20 | Structure and Content

- 4.4. Mycobacterium Kansaii Infection
  - 4.4.1. Epidemiology
  - 4.4.2. Infectious Agents
  - 4.4.3. Pathobiology.
  - 4.4.4. Clinical Picture
  - 4.4.5. Diagnosis
  - 4.4.6. Treatment
- 4.5. Leprosy
  - 4.5.1. Epidemiology
  - 4.5.2. Infectious Agents
  - 4.5.3. Pathobiology.
  - 4.5.4. Clinical Picture
  - 4.5.5. Diagnosis
  - 4.5.6. Treatment
- 4.6. Other Mycobacteriosis
- 4.7. Antimycobacterials
  - 4.7.1. Pharmacological Characteristics
  - 4.7.2. Clinical Use
- 4.8. Microbiological Characteristics of Anaerobic Germs
  - 4.8.1. Microbiological Characteristics of Anaerobic Germs
  - 4.8.2. Microbiological Studies.
- 4.9. Pulmonary Abscess
  - 4.9.1. Definition
  - 4.9.2. Etiology
  - 4.9.3. Clinical Picture
  - 4.9.4. Diagnosis
  - 4.9.5. Treatment
- 4.10. Intra-abdominal and Tubo-ovarian Abscesses
  - 4.10.1. Definition
  - 4.10.2. Etiology
  - 4.10.3. Clinical Picture
  - 4.10.4. Diagnosis
  - 4.10.5. Treatment



- 4.11. Intracerebral Abscess
  - 4.11.1. Definition
  - 4.11.2. Etiology
  - 4.11.3. Clinical Picture
  - 4.11.4. Diagnosis
  - 4.11.5. Treatment
- 4.12. Tetanus and Gangrene
  - 4.12.1. Tetanus: Neonatal and Adult
  - 4.12.2. Gangrene: Definition, Aetiology, Clinical picture, Diagnosis, Treatment
- 4.13. Main Antimicrobials against Anaerobic Germs
  - 4.13.1. Mechanism of Action
  - 4 13 2 Pharmacokinetics
  - 4.13.3. Dose
  - 4.13.4. Introduction
  - 4.13.5. Adverse Effects

#### Module 5. Mycoses and Parasitosis in Infectiology

- 5.1. General Information on Fungi
  - 5.1.1. General Features of Fungi
  - 5.1.2. Immune Response to Fungi
- Diagnostic Methods for Mycoses
  - 5.2.1. Direct Methods.
  - 5.2.2 Indirect Methods
- Superficial Mycosis: Tinea and Epidermatophytosis
  - 5.3.1. Definition
  - 5.3.2. Etiology
  - 5.3.3. Clinical Picture
  - 5.3.4. Diagnosis
  - 5.3.5. Treatment
- Deep Mycosis.
  - 5.4.1. Cryptococcosis
  - 5.4.2. Histoplasmosis
  - Aspergillosis 5.4.3.
  - 5.4.4. Other Mycosis

- 5.5. Update on Antifungals
  - Pharmacological Elements 5.5.1.
  - Clinical Use
- General overview of parasitic diseases
  - General Features of Microbiological Parasites
  - Immune Response to Parasites
  - Immune Response to Protozoa
  - Immune Response to Helminths
- Diagnostic Methods for Parasites
  - Diagnostic Methods for Protozoa
  - Diagnostic Methods for Helminths
- Intestinal Parasites
  - 5.8.1. Ascariasis
  - 5.8.2. Oxiuriasis
  - Ancylostomiosis and Necatoriosis
  - 5.8.4. Trichuriosis
- Tissue Parasitosis 59
  - 5.9.1. Malaria.
  - 5.9.2. Trypanosomiasis
  - Schistosomiasis 5.9.3.
  - Leishmaniasis 594
  - 5.9.5. Filariasis
- 5.10. Update on Antiparasitics
  - 5.10.1. Pharmacological Elements
  - 5.10.2. Clinical Use



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



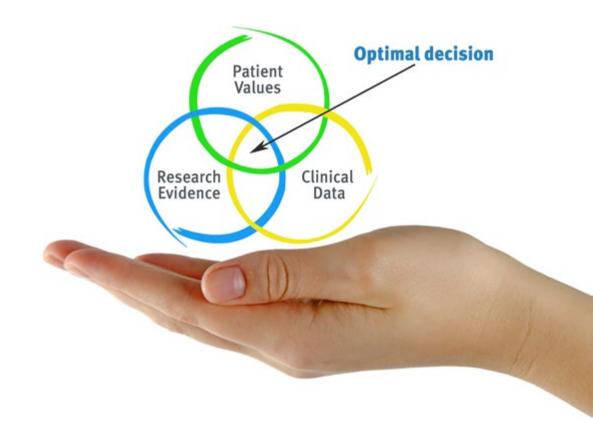


## tech 24 | Methodology

#### At TECH we use the Case Method

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

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



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



Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method"

#### The effectiveness of the method is justified by four fundamental achievements:

- 1. Pharmacists who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
- 2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
- 3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
- 4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.





## **Relearning Methodology**

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

Our University is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, which represent a real revolution with respect to simply studying and analyzing cases.

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



## Methodology | 27 tech

At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

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

Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.

## tech 28 | Methodology

This program offers the best educational material, prepared with professionals in mind:



#### **Study Material**

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

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



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

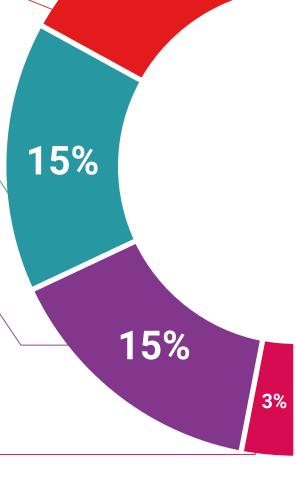
TECH introduces students to the latest techniques, to the latest educational advances, to the forefront of current pharmaceutical care procedures. All of this, first hand, and explained and detailed with precision to contribute to assimilation and a better understanding. And best of all, you can watch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



#### **Interactive Summaries**

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

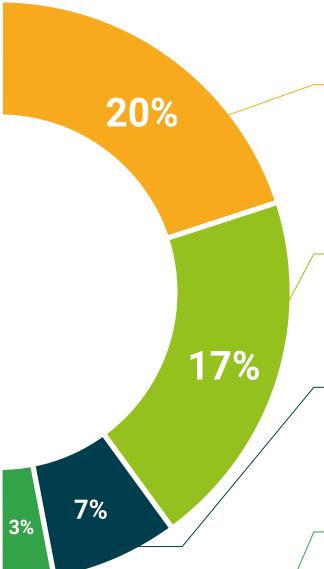
This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".





#### **Additional Reading**

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.



#### **Expert-Led Case Studies and Case Analysis**

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the expert will guide you through focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



#### **Testing & Retesting**

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



#### Classes

There is scientific evidence on the usefulness of learning by observing experts.

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



#### **Quick Action Guides**

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.







## tech 32 | Certificate

This Postgraduate Diploma in Viral, Bacterial and Fungal Infections contains the most complete and up-to-date scientific program on the market.

After the student has passed the evaluations, 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 it meets the requirements commonly required by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: Postgraduate Diploma in Viral, Bacterial and Fungal Infections Official No of Hours: 525 h.



#### Viral, Bacterial and Fungal Infections

This is a qualification awarded by this University, equivalent to 525 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

<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 education information tutors guarantee accreditation teaching institutions technology learning



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- » Schedule: at your own pace
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