

# Postgraduate Diploma

Antivirals, Antifungals,  
Antiparasitics, and  
the Development of  
Antibiotic Resistance



## Postgraduate Diploma Antivirals, Antimycotics, Antiparasitics and the Development of Antibiotic Resistance

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/pharmacy/postgraduate-diploma/postgraduate-diploma-antivirals-antimycotics-antiparasitics-development-antibiotic-resistance](http://www.techtute.com/us/pharmacy/postgraduate-diploma/postgraduate-diploma-antivirals-antimycotics-antiparasitics-development-antibiotic-resistance)

# Index

01

Introduction

---

*p. 4*

02

Objectives

---

*p. 8*

03

Course Management

---

*p. 12*

04

Structure and Content

---

*p. 20*

05

Methodology

---

*p. 26*

06

Certificate

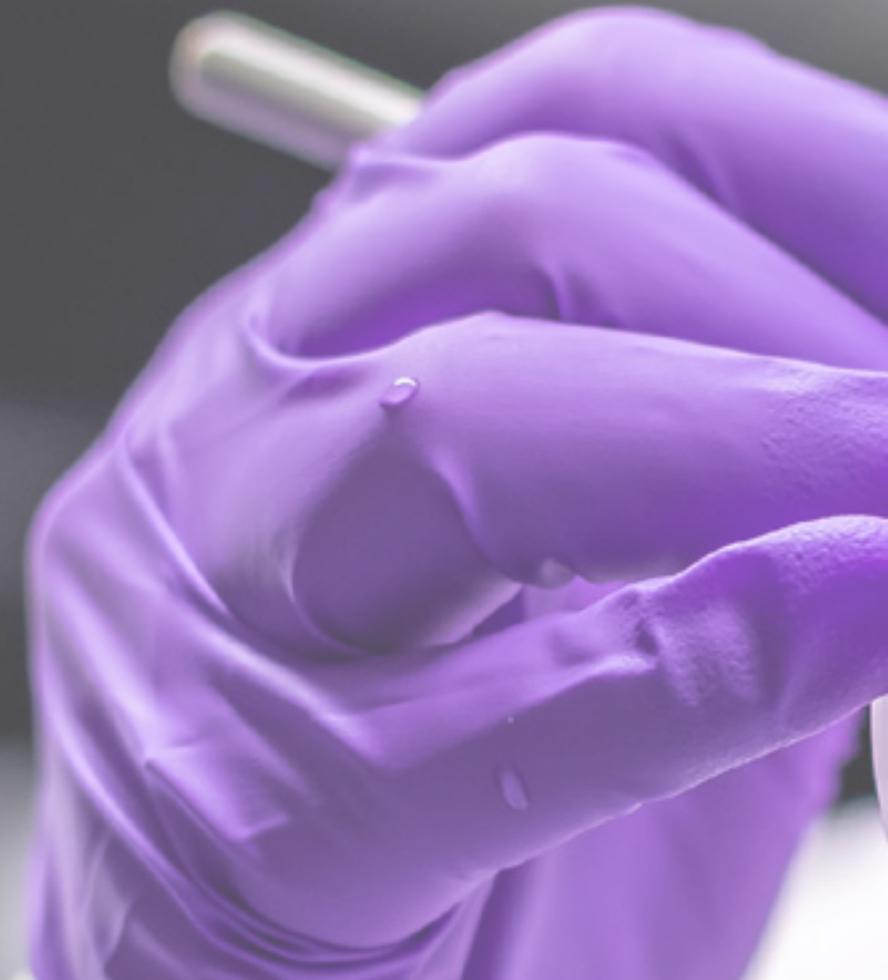
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*p. 34*

# 01

# Introduction

Depending on the type of organism causing the disease, infections are usually classified as bacterial, viral, fungal and parasitic. Over the years, various drugs have been developed to help the body fight these infectious agents. Bacteria have also developed the ability to counteract the effects of drugs. For all these reasons, the health and pharmaceutical sectors need professionals to continue research in the field, finding new mechanisms of action for effective treatment. For this reason, the following program has been developed, focusing on the knowledge that the student needs to achieve new professional objectives.





“

*By enrolling in this program, you will be empowering yourself to prevent the rise of antibiotic resistance”*

In humans, infections are caused by microorganisms, including bacteria, viruses, fungi and parasites. Although there are millions of these microbes in the world, only a small number are capable of causing an infectious reaction. In addition, over the years, these pathogens have developed new ways to evade the drugs designed to fight them, increasing the lethal risk of infections.

For this reason, the program of this Postgraduate Diploma has been designed to focus specifically on antivirals, antifungals, antiparasitics and the development of antibiotic resistance. Therefore, students will obtain specialized knowledge in each of them, starting with the general aspects and use of antivirals, which are used for diseases such as hepatitis, influenza and respiratory viruses.

On the other hand, antifungals are substances used to inhibit and destroy the harmful effects of fungi that cause infections in the human body. The program will classify them according to their chemical structure and mechanisms of action (local and systemic). In this way, the antimicrobial spectrum and the therapeutic use of amphotericin B and local antifungals will be known.

This group also includes antiparasitics, used to treat parasitosis or infectious diseases caused by parasites. As in the previous modules, the student will learn the general aspects of these drugs and their classification. Also taking into account the new advances and recommendations of the WHO for its use and regulation.

For all these reasons, the program will help graduating students to broaden their employment options, allowing them to access a market that demands experts willing to study and deploy new antibiotics. They will also be prepared to conduct independent research focused on the development of new drugs.

This **Postgraduate Diploma in Antivirals, Antimycotics, Antiparasitics and the Development of Antibiotic Resistance** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ The development of case studies presented by experts focused on advances in antibiotic therapy and antibiotic resistance
- ♦ 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 self-assessment can be used 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



*Understand how antibiotic resistance develops to develop new drugs"*

“

*Enroll in this program and you can get the knowledge you need to grow professionally”*

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.

Its 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 immersion education programmed to learn in real situations.

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

*The world needs new drugs to combat the most dangerous infections. Would you like to take part in new pharmacological studies?*

*There is no better time than now to start a new professional approach. Enroll now in this Postgraduate Diploma and access to new job opportunities.*



# 02 Objectives

Considering the growing demand for pharmacists to conduct new research, the objective of this program is clear: to provide its students with the opportunity to access a new job market. To this end, they will be provided with empirical knowledge of antivirals, antifungal and antiparasitic drugs. In this way, they will be able to become part of an international research team or conduct their own independent clinical studies at universities and specialized centers.



“

*Achieve your professional goals by participating in this Postgraduate Diploma. The doors to the world of work will open for you”*



## General Objectives

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- ♦ Guarantee professional improvement by constantly delving deeper and updating what we know
- ♦ Know the scientific evidence on antibiotic therapy and antimicrobial resistance
- ♦ Establish the correct use of drugs and the proper treatment of infectious diseases
- ♦ Use a multidisciplinary and integrative approach to facilitate the control of these pathologies



*Know the latest advances in antiparasitic drugs for trypanosomiasis"*





## Specific Objectives

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### Module 1. Antivirals

- ♦ Identify the general elements of antivirals, classifying them for study
- ♦ Know the antivirals used for liver diseases, recommendations and future projections in research
- ♦ Analyze treatments using antivirals for respiratory infections
- ♦ Review future challenges and controversies in the use of antiretrovirals for HIV

### Module 2. Antimycotics

- ♦ Provide an overview of antifungal agents according to their chemical and systemic classification
- ♦ Know the new developments on the toxicity of antifungal agents and their present and future indications
- ♦ Delve into the treatment of deep mycoses, using Aspergillosis, Cryptococcosis and Histoplasmosis
- ♦ Analyze the hepatic toxicity of systemic antifungal agents

### Module 3. Antiparasitics II

- ♦ Know the latest advances in antiparasitic drugs for trypanosomiasis
- ♦ Identify the therapeutic and pharmacological uses of antiparasitic drugs for schistosomiasis
- ♦ Determine the use of treatments for other less common parasitosis, such as dracunculiasis and hydatid cysts

### Module 4. Antibiotic Resistance

- ♦ Analyze the antibiotic resistance of infections such as staphylococci, gram-positive and gram-negative germs
- ♦ Identify emerging problems of antibiotic resistance of parasites and viruses
- ♦ Delve deeper into the new mechanisms of antibiotic resistance and superbugs
- ♦ Learn about antibiotic resistance control strategies and global programs to address antibiotic resistance

03

# Course Management

The faculty of this program is made up of top national and international experts. Many of them have spent their working careers in countries such as Cuba, Venezuela and other Latin American countries, where the incidence of infections is high. In this way, they are able to help students in their passage through the program, presenting real cases to exemplify the concepts raised.



“

*This teaching team has many years of experience in the sector. They have performed professionally in countries such as Cuba and Venezuela”*

## International Guest Director

Dr. Dominique Franco is a specialist in liver surgery and treatment of hepatocellular carcinoma, with an extensive background in the field of **regenerative medicine**. Throughout his career, he has focused his research on **cell therapy** for liver diseases and **organ bioconstruction**, areas in which he has made innovative contributions. His work focuses on developing new treatment techniques that not only seek to improve the effectiveness of surgical interventions, but also to optimize the quality of life of patients.

He has held leadership roles in several prestigious institutions. He was **Head of the Department of Liver Surgery and Transplantation at the Hôpital Antoine-Béclère**, where he participated in medical milestones such as the first liver transplant performed in Europe. His extensive experience in advanced surgery and transplantation has allowed him to acquire a deep knowledge in the management of complex liver pathologies, becoming a reference in the medical field both nationally and internationally. In addition, he has been **Director Emeritus of Digestive Surgery at the University Paris-Sud**, where he has contributed to the training of new generations of surgeons.

Internationally, he is recognized for his contributions to the development of Regenerative Medicine. In 2014, he founded CellSpace, an association dedicated to promoting **tissue and organ bioengineering** in France, with the aim of bringing together researchers from different disciplines to advance this field.

He has published more than 280 scientific articles in international journals, addressing topics such as Liver Surgery, **hepatocellular carcinoma** and Regenerative Medicine. In addition, he is a member of the U-1193 research unit at Inserm and a consultant at the Institut Pasteur, where he continues his work as a consultant on cutting-edge projects, contributing to expand the **boundaries of medical knowledge** in his area of expertise.



## Dr. Franco, Dominique

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- Academic Director of the Institut Pasteur, Paris, France
- Vice President Health Cluster for Physician Competitiveness
- Head of the Digestive Surgery Department at Antoine-Béclère Hospital (APHP)
- Director Emeritus of Digestive Surgery at the University Paris-Sud
- Founder of CellSpace
- Member of the research unit U-1193 of Inserm
- President of the French National Academy of Surgery

“

*Thanks to TECH, you will be able to learn with the best professionals in the world”*

## Management



### **Dr. Quintero Casanova, Jesús**

- ♦ Head of the Infectious Diseases Department of the Héroes del Baire Hospital
- ♦ Member of the Cuban Society of Internal Medicine
- ♦ Member of the Cuban Society of Paediatricians
- ♦ Medical specialist in Africa (Chad) and Venezuela
- ♦ Professor of medicine and internal medicine specialty at the Isle of Youth Faculty of Medical Sciences
- ♦ Main professor of the Professional Master's Degree in infectious diseases of the Faculty of Medical Sciences of the Isle of Youth
- ♦ Member of state examining boards for the medicine degree and internal medicine
- ♦ Degree in Medicine and Surgery from the Medical University of Havana. Cuba
- ♦ Specialist in Internal Medicine. "Héroes del Baire" Hospital
- ♦ Master's Degree in Tropical Diseases and Clinical Infectious Diseases from the Pedro Kuori Institute, Havana. Cuba
- ♦ National Research Award in Cuba
- ♦ Medical Science Teaching Award. Cuba

## Professors

### Dr. Valle Vargas, Mariano

- ♦ Head of the Internal Medicine Department of the Héroes del Baire Hospital
- ♦ Member of the Cuban Society of Internal Medicine
- ♦ Member of the Cuban Society of Paediatricians
- ♦ Medical specialist in Venezuela
- ♦ Professor on the Medicine Degree and Internal Medicine Speciality at the Faculty of Medical Sciences of Isla de la Juventud
- ♦ Professor of the Professional Master's Degree in Infectious Diseases in the Faculty of Medical Sciences in Isla de la Juventud
- ♦ Member of state examining boards for the medicine degree and internal medicine
- ♦ Member of tribunals for national scientific events. Cuba
- ♦ Degree in Medicine and Surgery from the University of Havana. Cuba
- ♦ Specialist in Internal Medicine. "Héroes del Baire" Hospital
- ♦ Master's Degree in Health Biostatistics
- ♦ Diploma in Epidemiology
- ♦ Medical Science Teaching Award. Cuba

### Dr. Cantalapedra Torres, Alejandro

- ♦ Member of the Cuban Society of Pediatrics
- ♦ Professor in the Medicine Degree and Pediatrics Specialty in the Faculty of Medical Sciences in Isla de la Juventud
- ♦ Member of tribunals for national scientific events. Cuba
- ♦ Medical specialist in Haiti
- ♦ Medical specialist in Antigua and Barbuda year 2008
- ♦ Degree in Medicine and Surgery from the University of Havana. Cuba
- ♦ Pediatrician. "Héroes del Baire" Hospital
- ♦ Master's Degree in infectious diseases
- ♦ Certificate in Medical Teaching
- ♦ Certificate in Health Management

### Dr. Laurence Carmenaty, Araelis

- ♦ Professor on the Medicine Degree in the Faculty of Medical Sciences in Isla de la Juventud
- ♦ Member of the Cuban Society of Microbiology
- ♦ Member of the Association of Pedagogues
- ♦ Degree in Microbiology University of Havana
- ♦ Master's Degree in infectious diseases
- ♦ She has participated in national and international microbiology events in Cuba and Venezuela

**Dr. Dranguet Bouly, José Ismael**

- ♦ Head of the Internal Medicine Department of the Héroes del Baire Hospital
- ♦ Member of the Cuban Society of Internal medicine and the Cuban Society of Intensive Therapy
- ♦ Member of the Cuban Society of Paediatricians
- ♦ Medical specialist in Mozambique
- ♦ Professor on the Medicine Degree and Internal Medicine Speciality at the Faculty of Medical Sciences of Isla de la Juventud
- ♦ Professor of the Professional Master's Degree in Infectious Diseases in the Faculty of Medical Sciences in Isla de la Juventud
- ♦ Member of state examining boards for the medicine degree and internal medicine
- ♦ Member of tribunals for national scientific events. Cuba
- ♦ Professor at the Catholic University of Santiago de Guayaquil, Ecuador.
- ♦ Degree in Medicine and Surgery from the University of Havana. Cuba
- ♦ Specialist in Internal Medicine and Intensive Therapy. "Héroes del Baire" Hospital
- ♦ Master's Degree in Infectious Diseases from the Pedro Kouri Institute of Cuba
- ♦ Medical Science Teaching Award. Cuba

**Dr. González Fiallo, Sayli**

- ♦ Professor of the Faculty of Medical Sciences in Isla de la Juventud
- ♦ Director of the Health Analysis, Biostatistics, and Surveillance Unit of the Municipal Health Directorate. Isle of Youth
- ♦ Degree in Hygiene and Epidemiology
- ♦ Master's Degree in Epidemiology

**Dr. Luís Dávila, Henry**

- ♦ Member of the Cuban Society of Gynecology and Obstetrics
- ♦ Member of the Cuban Society of Paediatricians
- ♦ Medical specialist in Guatemala
- ♦ Professor on the Medicine Degree in the Faculty of Medical Sciences in Isla de la Juventud
- ♦ Member of state examination boards in the field of medicine
- ♦ Member of tribunals for national scientific events. Cuba
- ♦ National research award. Cuba
- ♦ Degree in Medicine and Surgery from the University of Havana. Cuba
- ♦ Specialist in Gynecology and Obstetrics at Héroes del Baire Hospital. Cuba
- ♦ Master's Degree in comprehensive care for women
- ♦ Head of the Neck Pathology Service at Heroes del Baire Hospital
- ♦ Medical Science Teaching Award. Cuba

**Dr. Jiménez Valdés, Erlivan**

- ♦ Member of the Cuban Society of Pediatrics
- ♦ Professor in the Medicine Degree and Pediatrics Specialty in the Faculty of Medical Sciences in Isla de la Juventud
- ♦ Member of tribunals for national scientific events. Cuba
- ♦ Medical specialist in Venezuela
- ♦ Degree in Medicine and Surgery from the University of Havana. Cuba
- ♦ Pediatrician. "Héroes del Baire" Hospital
- ♦ Master's Degree in comprehensive childcare



**Dr. Batista Valladares, Adrián**

- ◆ Head of Senior Citizen Services in Isla de la Juventud. Cuba
- ◆ Member of the Cuban Society of Family Medicine
- ◆ Professor of the career of medicine and specialty of family medicine at the Isle of Youth Faculty of Medical Sciences.
- ◆ Professor of the Professional Master's Degree in Infectious Diseases in the Faculty of Medical Sciences in Isla de la Juventud
- ◆ Member of state examining boards for the medicine degree and speciality of family medicine
- ◆ Member of tribunals for national scientific events. Cuba
- ◆ Degree in Medicine and Surgery from the University of Havana. Cuba
- ◆ Specialist in Family and Community Medicine
- ◆ Master's Degree in Clinical Infectology
- ◆ Certificate in Diagnostic Ultrasound
- ◆ Diploma in healthcare management

# 04

# Structure and Content

The program of this Postgraduate Diploma in Antivirals, Antimycotics, Antiparasitics and the Development of Antibiotic Resistance has been designed with the intention of providing empirical and practical knowledge to students interested in the sector. In this way, each module will provide a detailed breakdown of all aspects of the drugs used to combat pathogenic infections. Upon completion, the student will be able to lead and plan their own research to develop and prevent viruses and infectious agents from fighting drugs.



“

*Delve deeper into the treatment of deep mycoses by completing this university program”*

## Module 1. Antivirals

- 1.1. General Features of Antivirals
  - 1.1.1. Classification
  - 1.1.2. Main Indications of Antivirals
- 1.2. Mechanisms of Action
  - 1.2.1. Mechanisms of Action of Antivirals
- 1.3. Antivirals for Hepatitis: New Recommendations and Future Research Projections
  - 1.3.1. Specific Viral Hepatitis
  - 1.3.2. Hepatitis B Treatment
  - 1.3.3. Hepatitis C Treatment
- 1.4. Antivirals for Respiratory Infections: Current Scientific Evidence
  - 1.4.1. Main Respiratory Viruses
  - 1.4.2. Influenza Treatment
  - 1.4.3. Other Respiratory System Virus Treatments
- 1.5. Antivirals for Herpes Viruses: Recent Changes in Management
  - 1.5.1. Main Herpes Virus Infections
  - 1.5.2. Herpes Simplex Infection Treatment
  - 1.5.3. Treatment of Varicella Zoster Virus Infections
- 1.6. Antiretrovirals for HIV: Certainties and Controversies. Future Challenges
  - 1.6.1. Classification of Antiretrovirals
  - 1.6.2. Mechanisms of Action of Antiretrovirals
  - 1.6.3. Antiretroviral Treatment of HIV Infection
  - 1.6.4. Adverse Reactions
  - 1.6.5. Antiretroviral Treatment Failure
- 1.7. Topical Antivirals
  - 1.7.1. Main Viral Infections of the Skin and Mucous Membranes
  - 1.7.2. Topical Antivirals
- 1.8. Update on Interferons: Their Use in Viral and Non-Infectious Diseases
  - 1.8.1. Classification and Action of Interferons
  - 1.8.2. Uses of Interferons
  - 1.8.3. Adverse Reactions of Interferons
- 1.9. New Areas of Antiviral Development
  - 1.9.1. Antibiotics in Viral Hemorrhagic Diseases
  - 1.9.2. Future Prospects for Antiviral Chemotherapy

## Module 2. Antimycotics

- 2.1. General Elements
  - 2.1.1. Concept
  - 2.1.2. Origins and Development
- 2.2. Classification
  - 2.2.1. Classification According to Chemical Structure
  - 2.2.2. Classification According to Action: Local and Systemic
- 2.3. Mechanisms of Action
  - 2.3.1. Mechanisms of Action of Antifungal Agents
- 2.4. Systemic Antifungal Agents: News on their Toxicity and their Present and Future Indications
  - 2.4.1. Antimicrobial Spectrum
  - 2.4.2. Pharmacokinetics and Pharmacodynamics
  - 2.4.3. Therapeutic Uses
  - 2.4.4. Adverse Effects
  - 2.4.5. Presentation and Dosage
- 2.5. Amphotericin B: Novel Concepts in its Use
  - 2.5.1. Mechanism of Action
  - 2.5.2. Antimicrobial Spectrum
  - 2.5.3. Pharmacokinetics and Pharmacodynamics
  - 2.5.4. Therapeutic Uses
  - 2.5.5. Adverse Effects
  - 2.5.6. Presentation and Dosage
- 2.6. Deep Mycosis Treatment: Current Events and Future Perspectives
  - 2.6.1. Aspergillosis
  - 2.6.2. Coccidioidomycosis
  - 2.6.3. Cryptococcosis
  - 2.6.4. Histoplasmosis

- 2.7. Local Antifungals
  - 2.7.1. Antimicrobial Spectrum
  - 2.7.2. Pharmacokinetics and Pharmacodynamics
  - 2.7.3. Therapeutic Uses
  - 2.7.4. Adverse Effects
  - 2.7.5. Presentation and Dosage
- 2.8. Treatment of Skin and Mucous Mycosis
  - 2.8.1. Tinea Capitis
  - 2.8.2. Skin Tinea
  - 2.8.3. Onychomycosis
- 2.9. Liver Toxicity of Systemic Antifungal Agents: Future Challenges
  - 2.9.1. Liver Metabolism of Antifungal Agents
  - 2.9.2. Hepatotoxicity of Antifungal Agents

### Module 3. Antiparasitics II

- 3.1. General Elements
  - 3.1.1. Concept
  - 3.1.2. Origins and Development
- 3.2. Classification
  - 3.2.1. Classification by Chemical Structure
  - 3.2.2. Classification by Action Against Different Parasites
- 3.3. Mechanisms of Action
  - 3.3.1. Action Mechanisms of Antiparasitics
- 3.4. Antiparasitics for Intestinal Parasitism: New Advances
  - 3.4.1. Classification
  - 3.4.2. Mechanism of Action
  - 3.4.3. Antimicrobial Spectrum
  - 3.4.4. Pharmacokinetics and Pharmacodynamics
  - 3.4.5. Therapeutic Uses
  - 3.4.6. Adverse Effects
  - 3.4.7. Presentation and Dosage
- 3.5. Antimalarials: Latest WHO Recommendations
  - 3.5.1. Classification
  - 3.5.2. Mechanism of Action
  - 3.5.3. Antimicrobial Spectrum
  - 3.5.4. Pharmacokinetics and Pharmacodynamics
  - 3.5.5. Therapeutic Uses
  - 3.5.6. Adverse Effects
  - 3.5.7. Presentation and Dosage
- 3.6. Update on Antiparasitics for Filariasis
  - 3.6.1. Classification
  - 3.6.2. Mechanism of Action
  - 3.6.3. Antimicrobial Spectrum
  - 3.6.4. Pharmacokinetics and Pharmacodynamics
  - 3.6.5. Therapeutic Uses
  - 3.6.6. Adverse Effects
  - 3.6.7. Presentation and Dosage
- 3.7. Latest Advances in Antiparasitics for Trypanosomiasis
  - 3.7.1. Classification
  - 3.7.2. Mechanism of Action
  - 3.7.3. Antimicrobial Spectrum
  - 3.7.4. Pharmacokinetics and Pharmacodynamics
  - 3.7.5. Therapeutic Uses
  - 3.7.6. Adverse Effects
  - 3.7.7. Presentation and Dosage
- 3.8. Antiparasitics for Schistosomiasis
  - 3.8.1. Classification
  - 3.8.2. Mechanism of Action
  - 3.8.3. Antimicrobial Spectrum
  - 3.8.4. Pharmacokinetics and Pharmacodynamics
  - 3.8.5. Therapeutic Uses
  - 3.8.6. Adverse Effects
  - 3.8.7. Presentation and Dosage

- 3.9. Antiparasitics for Leishmaniasis
  - 3.9.1. Classification
  - 3.9.2. Mechanism of Action
  - 3.9.3. Antimicrobial Spectrum
  - 3.9.4. Pharmacokinetics and Pharmacodynamics
  - 3.9.5. Therapeutic Uses
  - 3.9.6. Adverse Effects
  - 3.9.7. Presentation and Dosage
- 3.10. Treatment of Other Less Common Parasitosis
  - 3.10.1. Dracunculiasis
  - 3.10.2. Quiste hidatídico
  - 3.10.3. Other Tissue Parasites

#### Module 4. Antibiotic Resistance

- 4.1. Emergence and Development of Antibiotic Resistance
  - 4.1.1. Concept
  - 4.1.2. Classification
  - 4.1.3. Origins and Development
- 4.2. Mechanisms of Antibiotic Resistance: An Update
  - 4.2.1. Mechanisms of Antimicrobial Resistance
  - 4.2.2. New Resistance Mechanisms
- 4.3. Staphylococcal Resistance: Yesterday, Today, and Tomorrow
  - 4.3.1. Evolution of Staphylococcal Resistance
  - 4.3.2. Mechanisms of Staphylococcal Resistance
- 4.4. Resistance of Gram-Positive Germs: Latest Figure 2. Principles of Corporate Governance
  - 4.4.1. Evolution and Resistance of GramPositive Germs
  - 4.4.2. Resistance Mechanisms of GramPositive Germs
- 4.5. Resistance of Gram-Negative Germs: Current Clinical Implications
  - 4.5.1. Evolution of GramNegative Germ Resistance
  - 4.5.2. Resistance Mechanisms of GramNegative Germs





- 4.6. Virus Resistance
  - 4.6.1. Evolution of Virus Resistance
  - 4.6.2. Virus Resistance Mechanisms
- 4.7. Fungal Resistance
  - 4.7.1. Evolution of Fungal Resistance
  - 4.7.2. Mechanisms of Fungal Resistance
- 4.8. Parasite Resistance: An Emerging Problem
  - 4.8.1. Evolution of Parasite Resistance
  - 4.8.2. Mechanisms of Parasite Resistance
  - 4.8.3. Resistance to Antimalarials
- 4.9. New Mechanisms of Antibiotic Resistance and Superbugs
  - 4.9.1. Emergence and Progression of Superbugs
  - 4.9.2. New Resistance Mechanisms of Superbugs
- 4.10. Antibiotic Resistance Control Mechanisms and Programs
  - 4.10.1. Antibiotic Resistance Control Strategies
  - 4.10.2. Global Program and International Experiences in the Control of Antibiotic Resistance

“

*It studies the new mechanisms developed in the scientific community to avoid antibiotic resistance. Enroll now”*

05

# Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.



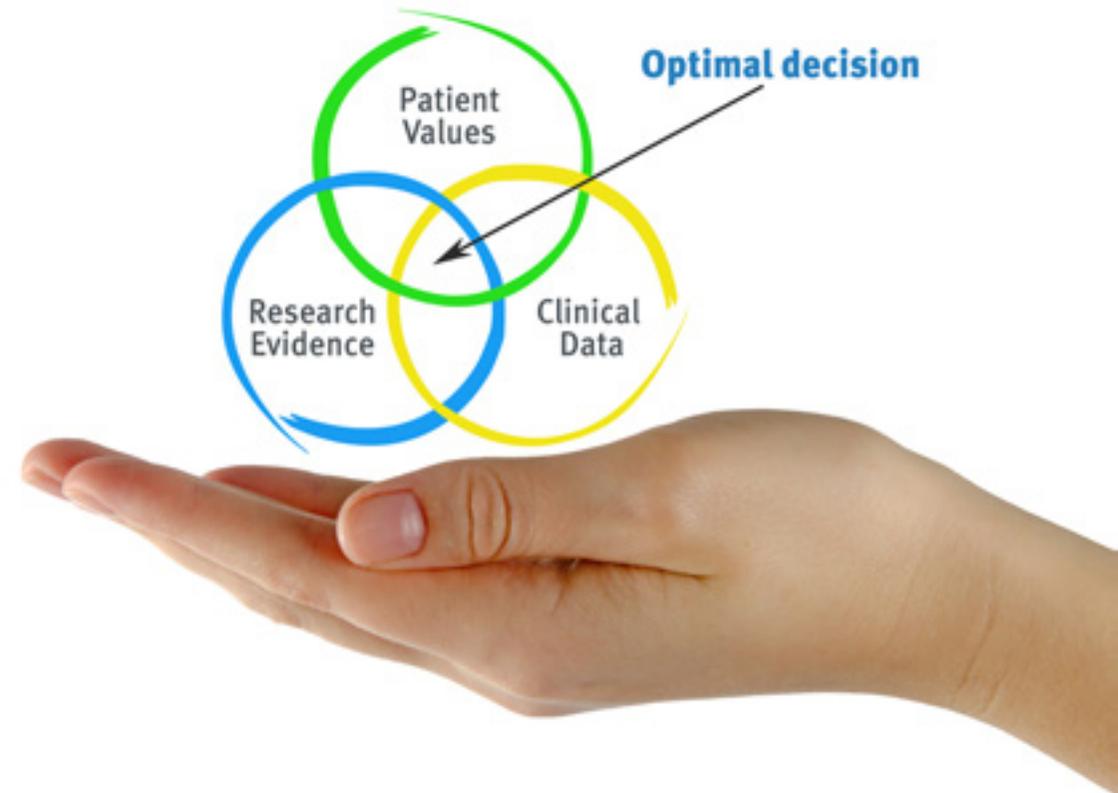


*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## 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. Gervas, 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.*



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

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

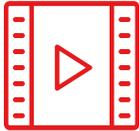
*Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.*

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

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



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



### Study Material

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

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



### Video Techniques and Procedures

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



### Interactive Summaries

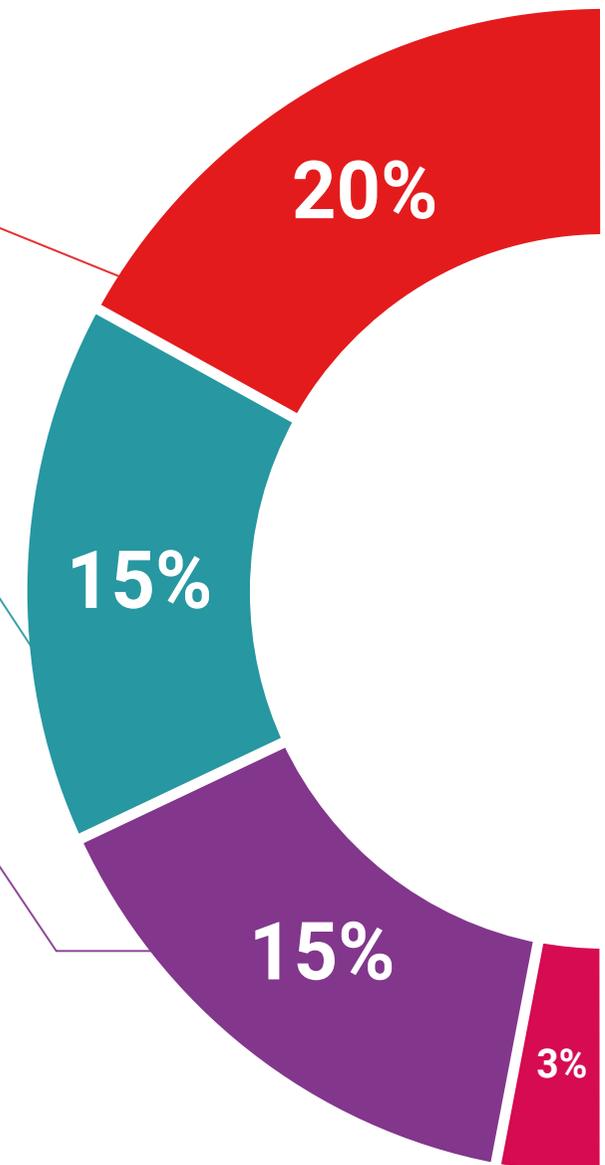
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

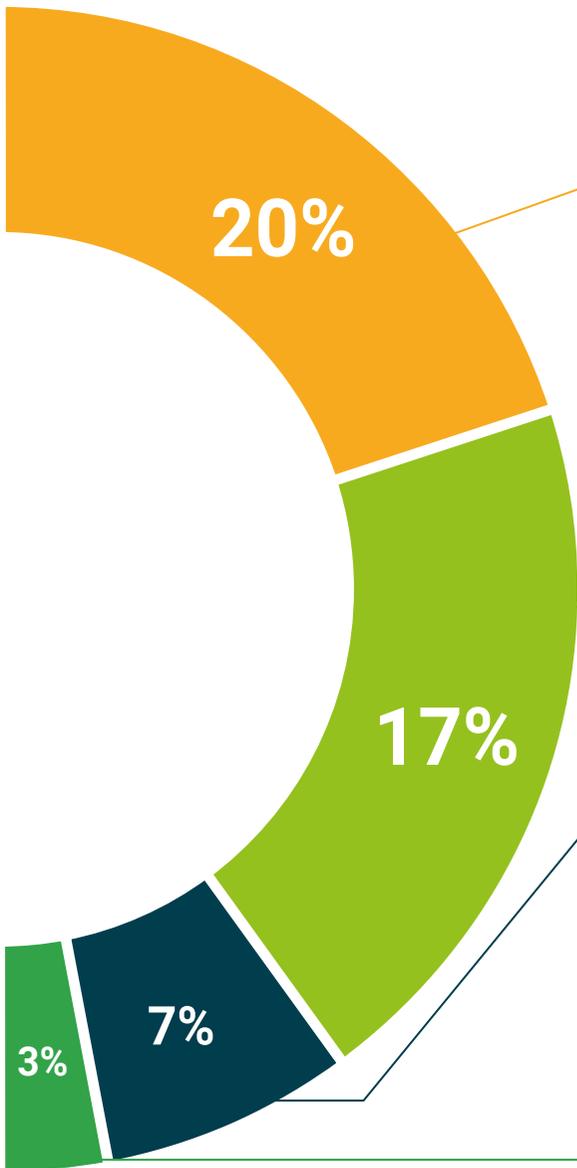
This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



### Additional Reading

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





### 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.



06

# Certificate

The Postgraduate Diploma in Antivirals, Antimycotics, Antiparasitics and the Development of Antibiotic Resistance guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.



“

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

This **Postgraduate Diploma in Antivirals, Antimycotics, Antiparasitics and the Development of Antibiotic Resistance** contains the most complete and up-to-date scientific on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma** issued by **TECH Technological University** via tracked delivery\*.

The diploma issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Antivirals, Antimycotics, Antiparasitics and the development of Antibiotic Resistance**

Modality: **online**

Duration: **6 months**



\*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.



**Postgraduate Diploma**  
Antivirals, Antimycotics,  
Antiparasitics and  
the Development of  
Antibiotic Resistance

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Schedule: at your own pace
- » Exams: online

# Postgraduate Diploma

Antivirals, Antifungals,  
Antiparasitics, and  
the Development of  
Antibiotic Resistance