

# Postgraduate Certificate

## Monitoring and Control of Antimicrobial Use





## Postgraduate Certificate Monitoring and Control of Antimicrobial Use

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/in/medicine/postgraduate-certificate/monitoring-control-antimicrobial-use](http://www.techtute.com/in/medicine/postgraduate-certificate/monitoring-control-antimicrobial-use)

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# 01

# Introduction

Antimicrobials are the most effective drugs for fighting infections, but they are also very easy to acquire, which makes them the most widely misused. Therefore, it is necessary for specialists to monitor and control the use of these drugs, so this Postraduate Certificate will help you to know the main control mechanisms and the most recent studies in this field of medicine.



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*This Postgraduate Certificate for the Monitoring and Control of Antimicrobial Use will generate a sense of security in the performance of your profession, which will help you grow personally and professionally"*

Prompt and appropriate use of antimicrobials can mean the difference between life and death for patients with infections. In fact, their creation is considered to have been one of the major breakthroughs in medicine, in that they have led to the cure of infections in a rapid and effective manner.

However, even with proper treatment, some microorganisms can become resistant to antimicrobials, which is one of the main health problems worldwide, as it complicates the treatment of infections, as well as their cure.

Therefore, it is important to monitor the use of these drugs to check their efficacy in the treatment of different diseases. In addition, this is the way to know what these drugs are used for and why they are abused by patients and, in some cases, also by infectologists, since the indiscriminate use of these drugs is the main cause of drug resistance.

In this way, the training program is aimed at providing healthcare professionals with the appropriate knowledge on the treatment of infections, with the latest uses and the necessary duration in each case. Thus, the main results of studies on the subject in recent years will be presented.

One of the objectives is to provide the physician with an adequate knowledge of the main strategies being carried out in hospital centers, as well as the main research on the Monitoring and Control of Antimicrobial Use, which will allow for better treatment in the future.

This **Postgraduate Certificate in Monitoring and Control of Antimicrobial Use** contains the most complete and up-to-date scientific program on the market. The most outstanding features of the Postgraduate Certificate are:

- ♦ The development of more than 75 case studies presented by experts in Antimicrobial Monitoring and Control. The graphic, schematic, and eminently practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional practice.
- ♦ The Latest News on Monitoring and Control of Antimicrobial Use
- ♦ The content of practical exercises where the self-evaluation process can be carried out to improve learning
- ♦ Special emphasis on innovative methodologies in Monitoring and Control of Antimicrobial Use.
- ♦ 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



*Update your knowledge through the program  
"Postgraduate Certificate in Monitoring and  
Control of Antimicrobial Use"*

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*This Postgraduate Certificate may be the best investment you can make in the selection of a refresher program for two reasons: in addition to updating your knowledge in Antimicrobial Utilization Monitoring and Control, you will obtain a Postgraduate Certificate issued by TECH Technological University"*

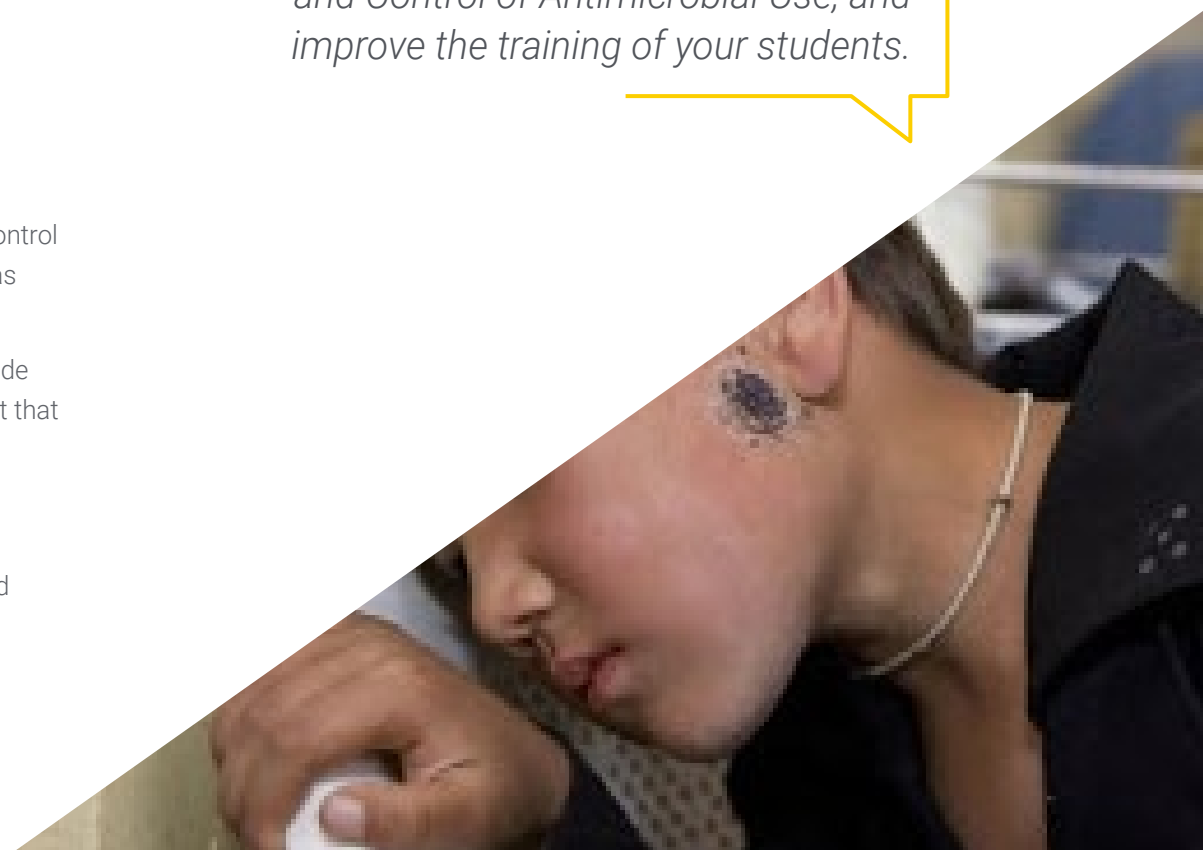
*Increase your decision-making confidence by updating your knowledge through this Postgraduate Certificate.*

*Take the opportunity to learn about the latest advances in Monitoring and Control of Antimicrobial Use, and improve the training of your students.*

Its teaching staff includes professionals belonging to the field of Monitoring and Control of Antimicrobial Use, who contribute their work experience to this training, as well as renowned specialists belonging to reference societies and prestigious universities.

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

This program's design is based on problem-based learning, by means of which the professional must try to solve the different professional practice situations that arise during the course university. For this purpose, the professional will be assisted by a novel interactive video system developed by recognized experts in the field of Monitoring and Control of Antimicrobial Use with extensive experience.



# 02 Objectives

The main goal of the Postgraduate Certificate is the improvement of health professionals, based on the acquisition of the most up-to-date and innovative scientific knowledge in the field of Monitoring and Control of Antimicrobial Use that will allow them to develop the skills for the correct and rational use of these drugs, making their daily clinical practice a bastion of the standards of the best scientific evidence available, with a critical, innovative, multidisciplinary and integrative sense.







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*This program will provide you with a sense of confidence in your medical practice, which will help you grow personally and professionally”*



## General Objective

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- Guarantee the professional improvement, through the currentness, novelty and depth of the best scientific evidence in the Monitoring and Control of Antimicrobial Use for the correct use of these drugs and the adequate treatment of infectious diseases with a multidisciplinary and integrative approach that facilitates the control of these pathologies.

*Update your knowledge through the program "Postgraduate Certificate in Monitoring and Control of Antimicrobial Use"*





## Specific Objectives

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- ◆ Provide students with advanced, in-depth, up-to-date, and multidisciplinary information that allows them to comprehensively approach the health-infectious disease process, the use of antibiotics, and antibiotic resistance
- ◆ Provide training and practical/theoretical improvement that will enable a reliable clinical diagnosis supported by the efficient use of diagnostic methods to indicate an effective antimicrobial treatment
- ◆ Explain the complex interrelationships between the host, the microorganism, and the antibiotic to be used
- ◆ Address the important role of microbiology and the diagnosis and control of infectious diseases
- ◆ Describe the main mechanisms of antimicrobial resistance.
- ◆ Highlight the importance of rational therapeutics in the rational use of antimicrobials
- ◆ Delve into drug usage studies within pharmacoepidemiology to facilitate the selection of antimicrobials in daily clinical practice
- ◆ Address, in detail and depth, the most up-to-date scientific evidence on the mechanisms of action, adverse effects, dosage, and use of antimicrobials.
- ◆ Emphasize the role of immunity and new alternatives for the treatment of infections
- ◆ Explain the production process of new antibiotics
- ◆ Delve into the treatment of the most significant infectious diseases with the latest advances in scientific medical knowledge
- ◆ Emphasise the development of future antibiotics and other therapeutic modalities for infectious diseases.
- ◆ Emphasize the future challenges of infectious diseases in decreasing infectious diseases morbidity and mortality and antimicrobial treatment

03

# Course Management

Renowned and recognized medical specialists with numerous publications, teaching experience, and professional experience in many countries, where many of the diseases studied have a high morbimortality, participate in the teaching program. The teaching staff is made up of a multidisciplinary team from various medical specialties, as internal medicine, pediatrics, general surgery, gynecology and obstetrics, microbiology, pathological anatomy and pharmacology, among others.





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*Learn about , the latest advances  
in Antibiotic Therapy and Antibiotic  
Resistance from leading professionals"*

## Management



### Dr. Quintero Casanova, Jesús

- ♦ Degree in Medicine and Surgery from the Medical University of Havana. Cuba
- ♦ Specialist in Internal Medicine. "Héroes del Baire" Hospital
- ♦ Professional Master's Degree in Tropical Diseases and Clinical Infectious Diseases from the Pedro Kuori Institute, Havana. Cuba
- ♦ 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 in (2009, 2013-15)
- ♦ Professor on the Medicine Degree and Internal Medicine Speciality at the Faculty of Medical Sciences of Isla de la Juventud
- ♦ 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
- ♦ National Research Prize in Cuba, 2002
- ♦ Medical Science Teaching Award. Cuba

## Professors

### Dr. Valle Vargas, Mariano

- ◆ 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
- ◆ 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 in 2007-10
- ◆ 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
- ◆ Medical Science Teaching Award. Cuba

### Dr. Dranguet Bouly, José Ismael

- ◆ 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
- ◆ 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, 2008-10
- ◆ 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
- ◆ Medical Science Teaching Award. Cuba
- ◆ Professor at the Catholic University of Santiago de Guayaquil Ecuador, 2018.

**Dr. Cantalapiedra Torres, Alejandro**

- ♦ 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
- ♦ 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 in 2000-01
- ♦ Medical specialist in Antigua and Barbuda year 2008

**Dña. Lawrence Carmenate, Arelis**

- ♦ Lic. in Microbiology at the University of Havana
- ♦ Master's Degree in infectious diseases
- ♦ 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
- ♦ Worked in Caracas, Venezuela from 2012 to 2014
- ♦ She has participated in national and international microbiology events in Cuba and Venezuela.

**Dr. Luís Dávila, Heenry**

- ♦ 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 Héroes del Baire Hospital
- ♦ Member of the Cuban Society of Gynecology and Obstetrics
- ♦ Member of the Cuban Society of Paediatricians
- ♦ Medical specialist in Guatemala, 2010-12
- ♦ 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
- ♦ Medical Science Teaching Award. Cuba

**Dr. Jiménez Valdés, Erlivan**

- ♦ Degree in Medicine and Surgery from the University of Havana. Cuba
- ♦ Pediatrician. "Héroes del Baire" Hospital
- ♦ Master's Degree in comprehensive childcare
- ♦ 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 in 2017





**Dr. Batista Valladares, Adrián**

- ♦ 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
- ♦ Head of Senior Citizen Services in Isla de la Juventud. Cuba
- ♦ Member of the Cuban Society of Family Medicine
- ♦ Professor of the medicine and family medicine degrees at the Faculty of Medical Sciences in 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 speciality of family medicine
- ♦ Member of tribunals for national scientific events. Cuba

**Dña. González Fiallo, Sayli**

- ♦ Degree in Hygiene and Epidemiology
- ♦ Master's Degree in Epidemiology
- ♦ 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

# 04

## Structure and Content

The teaching program has been designed by a group of professors and medical professionals from various medical specialties, with extensive medical, research and teaching experience in several countries in Europe, Africa, Central and South America, interested in integrating the latest and most current scientific knowledge of Monitoring and Control of Antimicrobial Use to ensure training and professional development to improve the daily clinical practice of professionals who care for patients or populations with infectious diseases.



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*This Postgraduate Certificate in Monitoring and Control of Antimicrobial Use contains the most complete and up-to-date scientific program on the market”*

## Module 1. Monitoring and Controlling the Use of Antimicrobials

- 1.1. Antibiotic Treatment Duration in the Treatment of Infections: New Role of Biomarkers
  - 1.1.1. Update on the Adequate Duration of the Most Frequent Infections
  - 1.1.2. Clinical and Laboratory Parameters to Determine the Duration of Treatment
- 1.2. Antimicrobial Usage Studies: Most Recent Impacts
  - 1.2.1. The Significance of Antimicrobial Usage Studies
  - 1.2.2. Results of Greater Impact in Recent Years by Antimicrobial Usage Studies
- 1.3. Antibiotic Committees in Hospitals: Their Role in the Future
  - 1.3.1. Structure and Operation
  - 1.3.2. Objectives
  - 1.3.3. Activities
  - 1.3.4. Impacts
- 1.4. Antimicrobial Use Policies: Current Impact on Antimicrobial Use.
  - 1.4.1. Concepts
  - 1.4.2. Types of Policies
  - 1.4.3. Objectives
  - 1.4.4. Impacts
- 1.5. Pharmacotherapeutic Committees: Practical Importance
  - 1.5.1. Structure and Function
  - 1.5.2. Objectives
  - 1.5.3. Activities
  - 1.5.4. Impacts
- 1.6. Infectious Disease Specialists and their Role in the Rational Use of Antimicrobials
  - 1.6.1. Functions and Activities of Infectious Disease Specialists to Promote and Encourage the Rational Use of Antimicrobials
- 1.7. Impact of Training and Professional Development on Antimicrobial Usage



- 1.7.1. Importance of Training and Professional Development
- 1.7.2. Types
- 1.7.3. Impacts.
- 1.8. Hospital Strategies for Rational Antimicrobial Use: What the Evidence Says
  - 1.8.1. Hospital Strategies for the Control of the Rational Use of Antimicrobials
  - 1.8.2. Impacts
- 1.9. Scientific Research for the Future Control and Monitoring of Antibiotic Therapy in Patients with Sepsis
  - 1.9.1. Search for New Parameters and Markers for Monitoring and Control of Antibiotic Therapeutics



*A unique, key, and decisive  
Training experience to boost  
your professional development”*

05

# Methodology

This training program provides you with a different way of learning. Our methodology uses a cyclical learning approach: ***Re-learning***.

This teaching system is used 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.



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*Discover Re-learning, 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

In a given situation, what would you do? Throughout the program, you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, resolve the situation. There is abundant scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

*With TECH you can 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 potential 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 professional medical practice.



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*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. Students who follow this method not only grasp concepts, but also develop their mental capacity by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on 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.



## Re-Learning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Re-learning.

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.



*The physician 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 Re-learning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best Spanish-speaking online university (Columbia University).

With this methodology we have trained more than 250,000 physicians with unprecedented success, in all clinical specialties regardless of the surgical load. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*Re-learning 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 (we learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

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



In this program you will have access to the best educational material, prepared with you 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.

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



#### Latest Techniques and Procedures on Video

We introduce you to the latest techniques, to the latest educational advances, to the forefront of current medical techniques. All this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.



#### Interactive Summaries

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

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



#### Additional Reading

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





#### 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 & Re-testing

We periodically evaluate and re-evaluate your knowledge throughout the program, through assessment and self-assessment activities and exercises: so that you can see how you are achieving your goals.



#### Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an expert strengthens knowledge and memory, and generates confidence in our future difficult decisions.



#### Quick Action Guides

We offer you the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help you progress in your learning.



# 06 Certificate

This **Postgraduate Certificate in Monitoring and Controlling the Use of Antimicrobials** guarantees you, in addition to the most rigorous and updated training, the access to a Postgraduate Certificate issued by **TECH Technological University**.



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*Successfully complete this training and receive your university degree without travel or laborious paperwork”*

This **Postgraduate Certificate in Monitoring and Control of Antimicrobial Use** contains the most complete and up-to-date scientific program on the market.

After students have passed the assessments, they will receive by certified mail their Postgraduate Certificate issued by **TECH Technological University**.

The certificate issued by **TECH Technological University**, will specify the qualification obtained through the Postgraduate Certificate, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Certificate in Monitoring and Control of Antimicrobial Use**

Official Number of Hours: **125**







## Postgraduate Certificate Monitoring and Control of Antimicrobial Use

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- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
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## Monitoring and Control of Antimicrobial Use

