

Postgraduate Certificate

Advances in Antimicrobials





Postgraduate Certificate Advances in Antimicrobials

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

Website: www.techtute.com/us/pharmacy/postgraduate-certificate/advances-antimicrobials

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01

Introduction

Antimicrobials are designed to treat or prevent diseases caused by microorganisms. Throughout the world, their use makes the difference between the cure and death of a patient, which is why their study and development is so important. With this in mind, the following program will focus on helping pharmacists learn about the major advances in this field, learning a bit of the history that gave rise to antimicrobial therapy, as well as the use and combinations that have been given with these drugs.



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Discover the interaction and effects of antimicrobials in patients with liver disease.”

An antimicrobial is a drug used to prevent the destructive action of microorganisms in the human body. Hence, the great importance of using them nowadays, as well as continuing with their study to avoid the resistance of the small organisms they are intended to combat.

In this sense, this Postgraduate Certificate in Advances in Antimicrobials will help student pharmacists to learn about the latest advances in the field, allowing them to access content that will help them to determine the interaction between different antimicrobials and their role in surgical morbidity and mortality.

On the other hand, the current criteria for the use of these drugs in patients with previous conditions, such as hepatitis, renal failure or an immunosuppressed system, will be taken into account. Likewise, the impact of antibiotics on pregnancy and lactation will be discussed and analyzed, addressing the latest findings on whether or not they penetrate the placenta and breast milk.

This **Postgraduate Certificate in Advances in Antimicrobials** contains the most complete and up-to-date educational 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 eminently 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.



Antibiotics have become one of the most widely used drugs to fight bacterial infections."

“

By enrolling in the program you will achieve professional recognition from your peers, allowing you to improve your career options.”

The program’s teaching staff includes professionals from sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

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

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

Establishes the duration of antibiotic therapy in patients with a depressed immune system.

Continues the research work of other professionals in the area contributing new ideas.



02

Objectives

The main goal of this Postgraduate Certificate is to provide students with the opportunity to access unique knowledge in Antimicrobial Advances. To this end, they will be provided with a series of empirical and practical resources that will allow them to better understand the knowledge presented. In this sense, they will learn about the interaction of antibiotics in patients with previous pathologies and will determine their relevance in pregnant and breastfeeding women.



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*Start a new career path now.
Enroll in this Postgraduate
Certificate".*



General Objectives

- ♦ 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.





Specific Objectives

- ◆ Know the emergence and development of antimicrobial therapeutics
- ◆ Identify the general and recent elements of antimicrobial therapeutics to define concepts and developments in the area
- ◆ Learn what recent discoveries have been made about antibiotics and the blood-brain barrier
- ◆ Determine the safety of antibiotics in pregnancy and lactation based on the latest scientific findings.

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Help develop new antibiotics by completing the program of this Postgraduate Certificate”.

03

Course Management

Due to the importance of the development of new antibiotics for the scientific community, the faculty selected for this program is made up of professionals who have worked in countries with a high incidence of bacterial infections. In this sense, they are trained to provide students with all the knowledge they need in the area.





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This teaching team will provide real cases to bring you as close as possible to the medical reality of the sector".

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 (TChad) 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
- ◆ 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. Cantalapiedra 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. Dávila, Henry Luis

- ♦ 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 Héroes 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



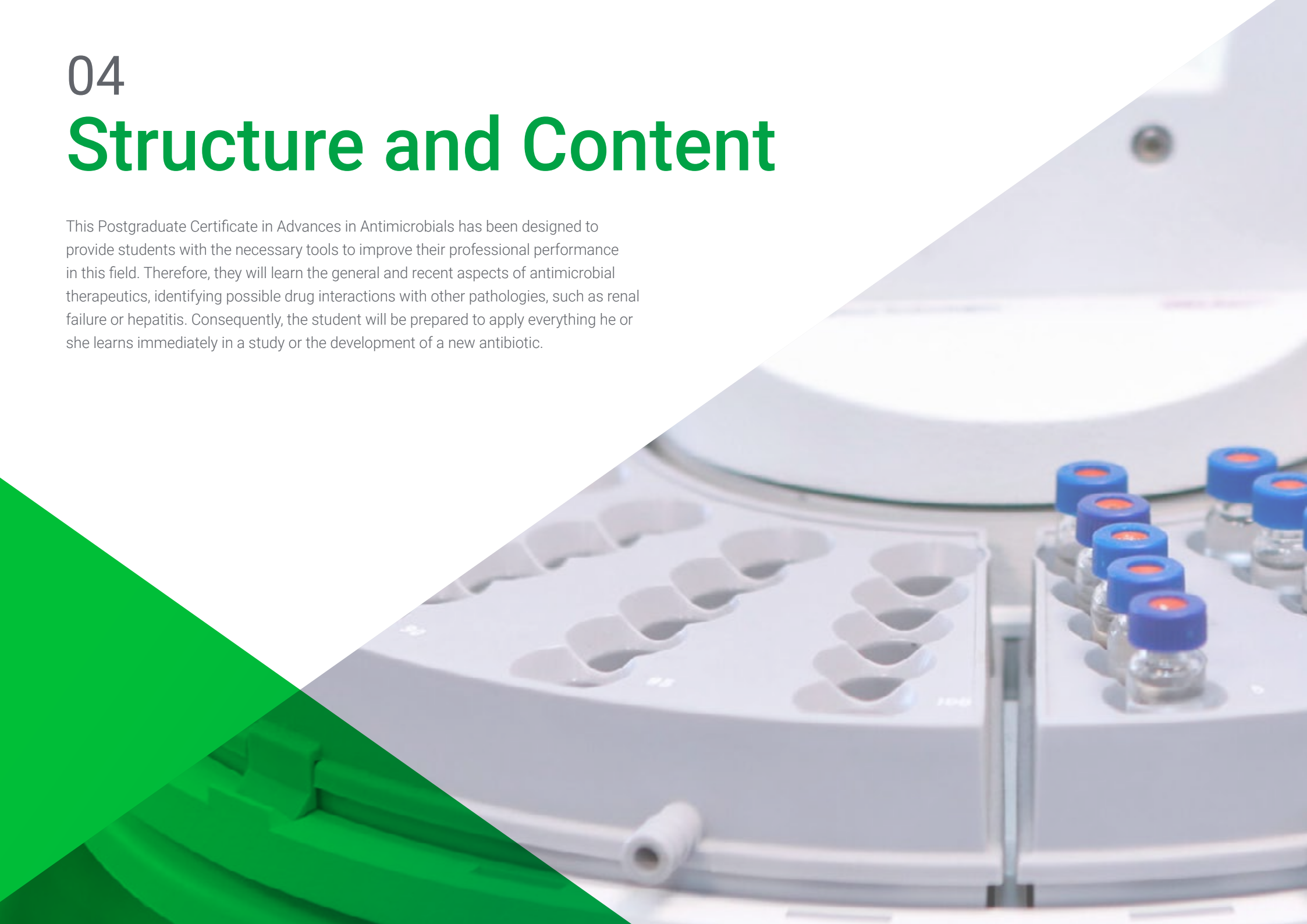
Dr. Batista Valladares, Adrián

- ◆ 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

This Postgraduate Certificate in Advances in Antimicrobials has been designed to provide students with the necessary tools to improve their professional performance in this field. Therefore, they will learn the general and recent aspects of antimicrobial therapeutics, identifying possible drug interactions with other pathologies, such as renal failure or hepatitis. Consequently, the student will be prepared to apply everything he or she learns immediately in a study or the development of a new antibiotic.





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Don't let more time pass. The time to learn is now. Register now to access the virtual classroom and start learning".

Module 1. Antimicrobials: General Aspects

- 1.1. History and Development of Antimicrobials
 - 1.1.1. Emergence and Development of Antimicrobial Treatments
 - 1.1.2. Impact on Morbimortality of Infectious Diseases
- 1.2. Classifications: Practical and Future Use of Each Each One Of Them
 - 1.2.1. Chemical Classification
 - 1.2.2. Classification by Antimicrobial Action
 - 1.2.3. Classification According to their Antimicrobial Spectrum
- 1.3. Update on the Mechanisms of Action of Antimicrobials
 - 1.3.1. Main Antimicrobial Mechanisms of Action
- 1.4. General and Latest Elements of Antimicrobial Treatments
 - 1.4.1. General and Recent Concepts in the Use of Antimicrobials
 - 1.4.2. New Developments in the Use of Antimicrobial Combinations
 - 1.4.3. Interactions between Antimicrobials
- 1.5. Antibiotic Prophylaxis: Its Current Role in Surgical Morbidity and Mortality
 - 1.5.1. Concept
 - 1.5.2. Objectives
 - 1.5.3. Types of Antibiotic Prophylaxis
 - 1.5.4. Perioperative Antibiotic Prophylaxis
- 1.6. Phased Antibiotic Treatment: Current Criteria
 - 1.6.1. Concept
 - 1.6.2. Principles
 - 1.6.3. Objectives
- 1.7. Latest Concepts in the Use of Antibiotics in Renal Failure
 - 1.7.1. Renal Excretion of Antibiotics
 - 1.7.2. Renal Toxicity of Antibiotics
 - 1.7.2. Dose Modification in Renal Failure
- 1.8. Antibiotics and the Blood-Brain Barrier: Recent Findings
 - 1.8.1. The Passage of Antibiotics through the Blood-Brain Barrier.
 - 1.8.2. Antibiotics in Central Nervous System Infections



- 1.9. Antibiotics and Liver Failure: Progress and Future Challenges
 - 1.9.1. Hepatic Metabolism of Antibiotics
 - 1.9.2. Hepatic Toxicity of Antimicrobials
 - 1.9.3. Dose Adjustment in Hepatic Insufficiency
- 1.10. Antibiotic Use in the Immunosuppressed: The New Paradigm
 - 1.10.1. Immune Response to Infection
 - 1.10.2. Main Opportunistic Germs in the Immunosuppressed
 - 1.10.3. Principles for the Choice and Duration of Antibiotic Therapy in the Immunosuppressed
- 1.11. Antibiotics in Pregnancy and Lactation: The Safety of their Use According to the Latest Scientific Findings
 - 1.11.1. The Passage of Antibiotics through the Placenta
 - 1.11.2. Antibiotics and Breast Milk
 - 1.11.3. Teratogenicity of Antibiotics

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Incorporate the knowledge provided by this Postgraduate Certificate to your professional practice”.

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, 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***.



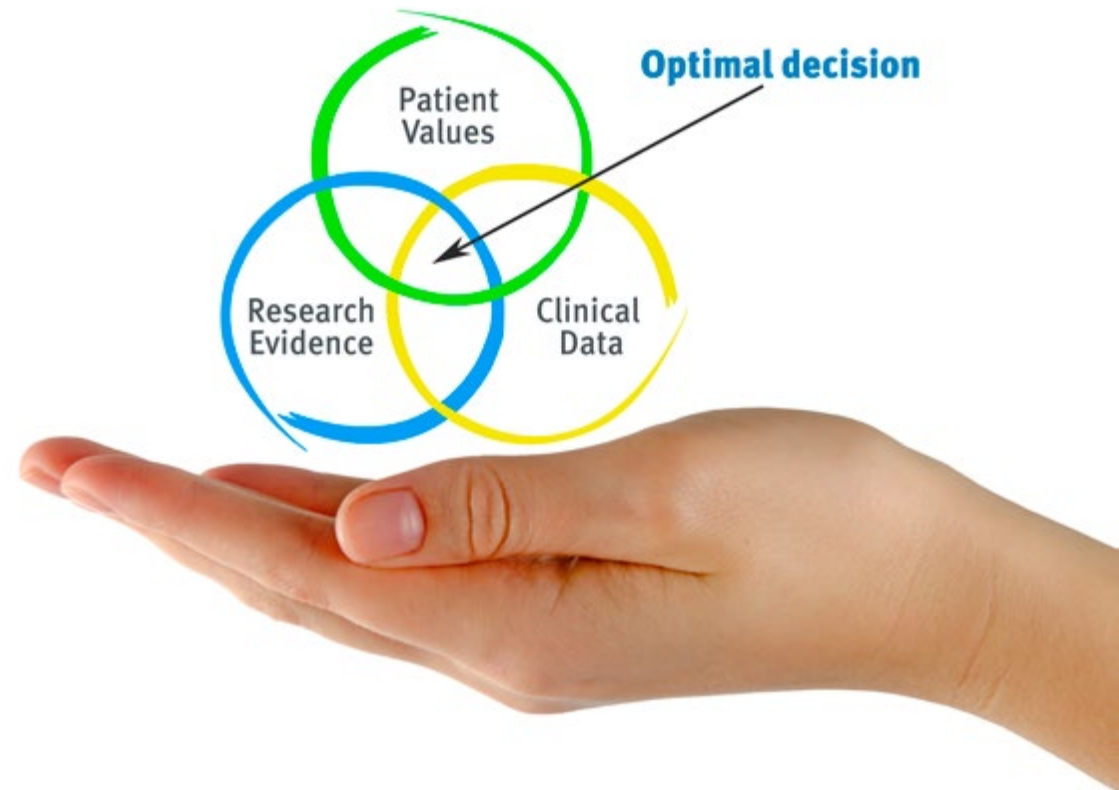


Discover Re-learning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization".

At TECH we use the Case Method

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 abundant 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.

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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. 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.



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.



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 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, 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.

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 (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

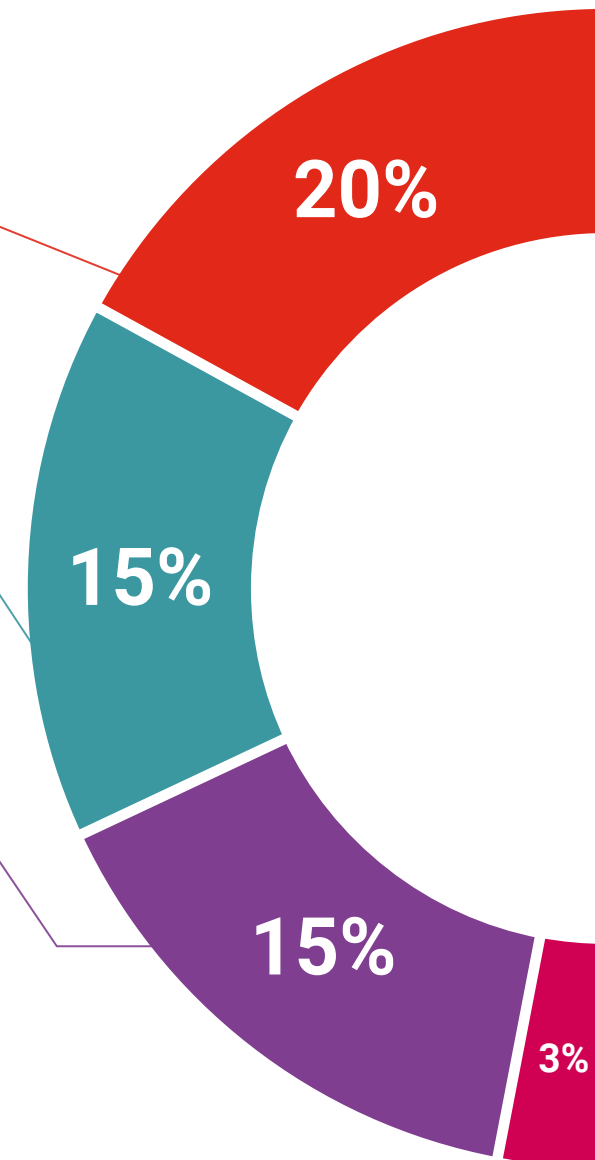
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

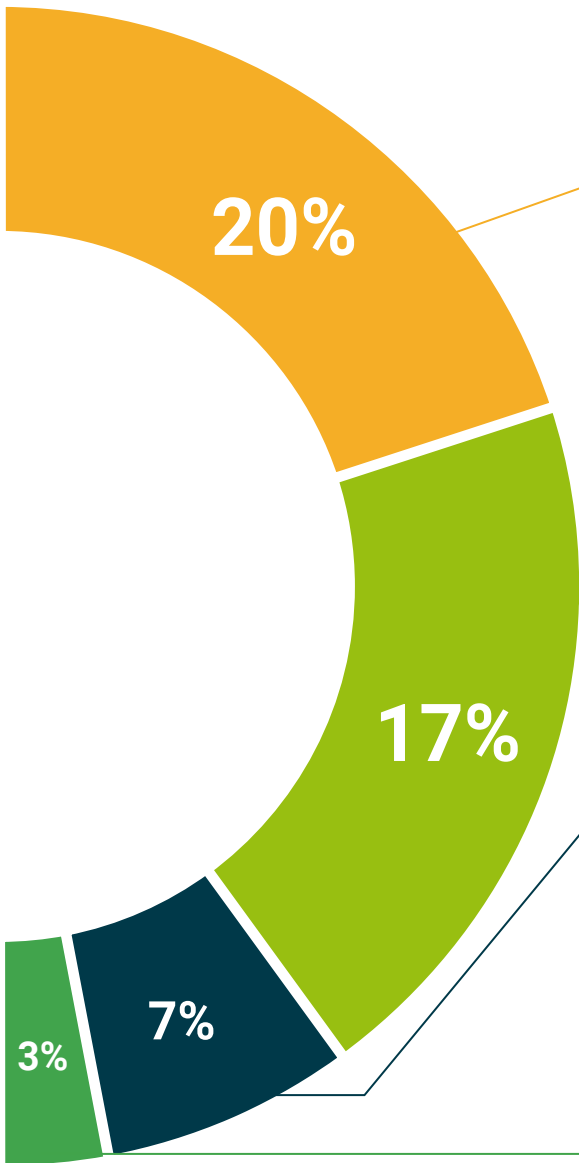
This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



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 & Re-testing

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 your goals.



Classes

There is scientific evidence on the usefulness of learning by observing experts: The system termed Learning from an Expert strengthens knowledge and recall capacity, and generates confidence in the face of difficult decisions in the future.



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

This Postgraduate Certificate in Advances in Antimicrobials: guarantees, in addition to the most rigorous and updated training, 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 Advances in Antimicrobials**: 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 Certificate** issued by **TECH - Technological University via tracked delivery**.

This Professional Master's Degree Contributes in a Relevant Way to the Development of continuing Education of the Professional and Provides a High University Curricular Value to their Training, and is 100% valid in all Public Examinations, Professional Career, and Labor Exchanges of any Spanish Autonomous Community..

Title: **Postgraduate Certificate in Advances in Antimicrobials**:

ECTS: **6**

Official Number of Hours: **150**



*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.

health future
confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present
online training
development language
classroom



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Postgraduate Certificate Advances in Antimicrobials