

# Postgraduate Certificate

## Antibiotics and Antimicrobial Therapies of the Future



## Postgraduate Certificate Antibiotics and Antimicrobial Therapies of the Future

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Accreditation: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/medicine/postgraduate-certificate/antibiotics-antimicrobial-therapies-future](http://www.techtute.com/us/medicine/postgraduate-certificate/antibiotics-antimicrobial-therapies-future)

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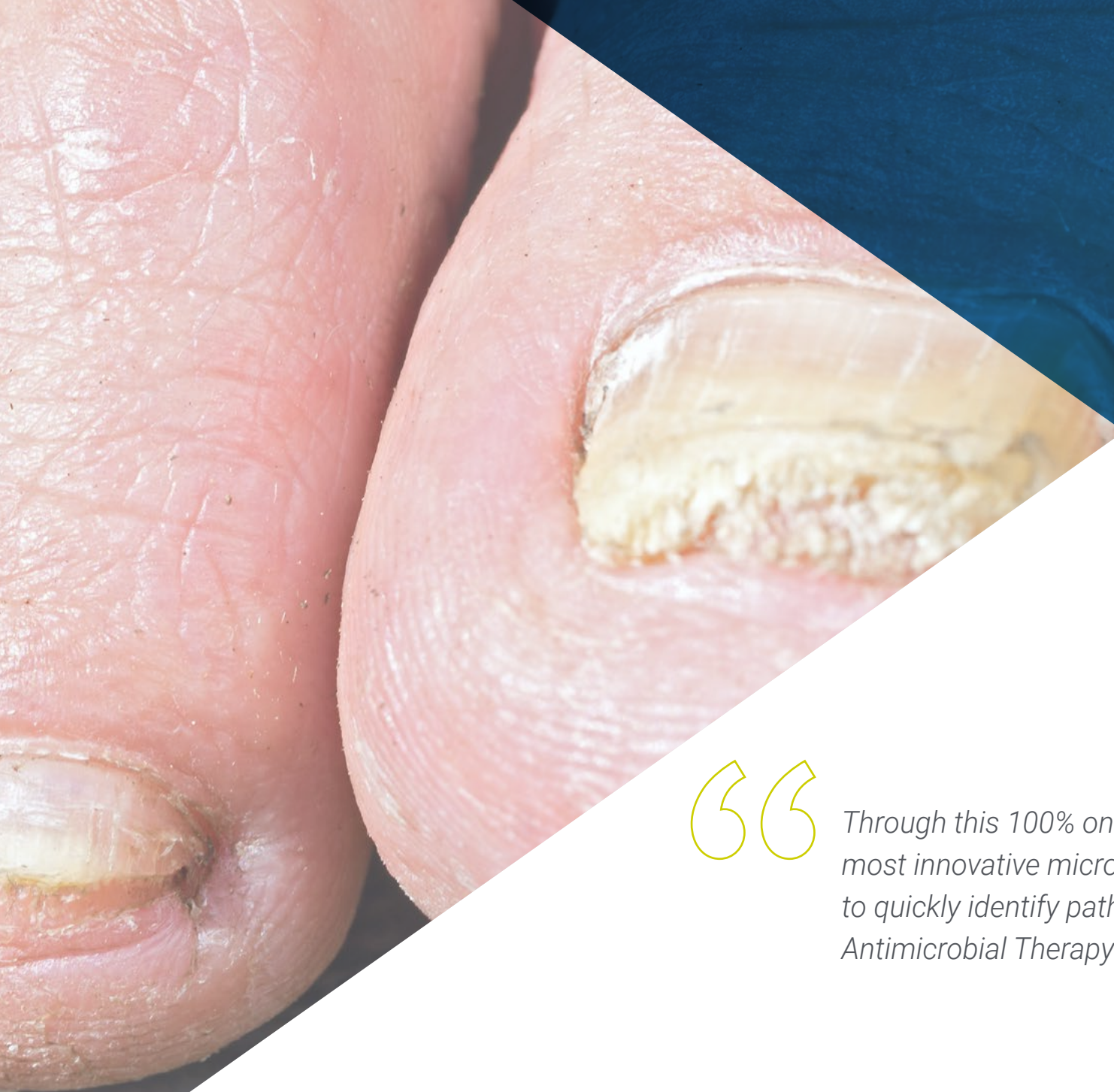
# 01

# Introduction

A World Health Organization report predicts that antimicrobial resistant infections could cause up to 10 million deaths annually in the coming years if urgent and effective measures are not taken. To respond to this healthcare crisis, it is essential that clinicians implement the most innovative rapid diagnostic techniques and advanced susceptibility testing in their daily practice to improve the accuracy of antimicrobial treatment selection. Only in this way will professionals be able to carry out more targeted and personalized therapies for each patient. In this context, TECH presents a revolutionary 100% online university program focused on the most cutting-edge techniques to fight infections, among which are the Therapeutic Targets.







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*Through this 100% online program, you will manage the most innovative microbiological diagnostic techniques to quickly identify pathogens and determine the best Antimicrobial Therapy”*

The landscape of antibiotics and antimicrobial therapies is undergoing a radical transformation thanks to advances in technology and diagnostics. For example, molecular tools and genomic sequencing have enabled the identification of new Therapeutic Targets, as well as the development of specific antimicrobials that can more effectively combat resistant pathogens.

Within this framework, TECH implements a very complete Postgraduate Certificate in Antibiotics and Antimicrobial Therapies of the Future. The academic itinerary will delve into the research, approval and commercialization of new antibiotics. In this regard, the syllabus will delve into the most innovative techniques to fight infections, among which the Therapeutic Targets stand out. In this way, graduates will be able to select the most effective treatments to address the underlying cause of the patient's pathology. In tune with this, teaching materials will analyze the future of antimicrobials, urging professionals to offer innovative and creative solutions. In addition, the program will provide physicians with skills to design and implement effective infection control strategies.

It should be noted that this program is distinguished by its 100% online methodology. This modality will provide physicians with the necessary flexibility to adapt to their professional schedules. Similarly, TECH's innovative Relearning methodology, based on the repetition of key concepts, will be implemented to fix knowledge and facilitate effective learning. In this way, the combination of accessibility and innovative pedagogical approach will ensure that medical professionals acquire practical skills to elevate their work practice to the top.

The program includes the participation of an International Guest Director, whose global prestige is due to his impressive professional career. He will offer a Masterclass focused on antibiotic resistance.

This **Postgraduate Certificate in Antibiotics and Antimicrobial Therapies of the Future** 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 in Advances in Antibiotic Therapy and Antibiotic Resistance
- ♦ The graphic, schematic and eminently practical contents with which it is conceived gather scientific and practical information on those disciplines that are indispensable for professional practice
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning
- ♦ Its special emphasis on innovative methodologies
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



*Enhance your professional career with the collaboration of an International Guest Director, who will offer a Masterclass of excellent level"*



*You will delve into new Therapeutic Targets, which will allow you to select the most effective treatments to address the underlying causes of disease"*

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

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

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

*Want to stay current on the most effective drugs to control the immune response? Achieve it with this program in only 180 hours.*

*Thanks to TECH's innovative Relearning method, you will assimilate the essential concepts in a fast, natural and accurate way.*





# 02

# Objectives

Upon completion of this program, physicians will have a solid understanding of the microbiology of pathogenic microorganisms, as well as the resistance mechanisms they develop against antimicrobials. In this sense, graduates will use the most advanced molecular diagnostic techniques to identify pathogens and determine their susceptibility to antimicrobial treatments. At the same time, professionals will master the principles of quality management in the prescription and administration of antibiotics, ensuring highly safe and effective clinical practices.





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*You will develop skills to manage Antimicrobial Resistance, including the implementation of antimicrobial stewardship programs and infection control strategies”*



## General Objectives

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- ♦ Improve your knowledge of the rehabilitation professional in the field of electrotherapy
- ♦ Promote work strategies based on a comprehensive approach to the patient as a standard model for achieving excellent care
- ♦ Encourage the acquisition of technical skills and abilities, through a powerful audiovisual system and the possibility of development through online workshops for simulation and/or specific teaching
- ♦ Encourage professional stimulation through continuing education and research





## Specific Objectives

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- Advise pharmaceutical and biotechnology industry teams in the process of research and production of new antimicrobials and alternative treatments for infectious diseases
- Master the most recent elements of antimicrobial usage studies

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*The interactive summaries of each topic will allow you to consolidate in a more dynamic way the concepts on the new ways to fight Sepsis”*



# 03

## Course Management

TECH's priority is to offer the most comprehensive and renewed programs in the academic panorama, which is why it carries out a meticulous process to constitute each of its teaching staff. For this Postgraduate Certificate, TECH brings together the best experts in the field of Antibiotics and Antimicrobial Therapies of the future. These professionals have an extensive professional background, where they have been part of reference health institutions. Thanks to this, they have developed top quality teaching materials adapted to the needs of the labor market.

In this way, graduates will have access to an immersive experience that will significantly optimize their daily practice.





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*You will access an academic itinerary designed by a teaching team specialized in Antibiotics and Antimicrobial Therapies of the future”*

## 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 Pasteur Institute, 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 Pasteur Institute, 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

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

# 04

## Structure and Content

Through this program, physicians will have a holistic understanding of the different types of antibiotics and their mechanisms of action. To this end, the curriculum will delve into the clinical trials underway for the approval of new antibiotics. In this regard, the curriculum will delve into Therapeutic Targets, which will enable graduates to select treatments that will be effective in addressing the underlying cause of the patient's disease. In addition, the teaching materials will analyze the emergence of monoclonal antibodies bearing in mind their classification. Therefore, practitioners will develop skills to manage antimicrobial resistance in healthcare settings.



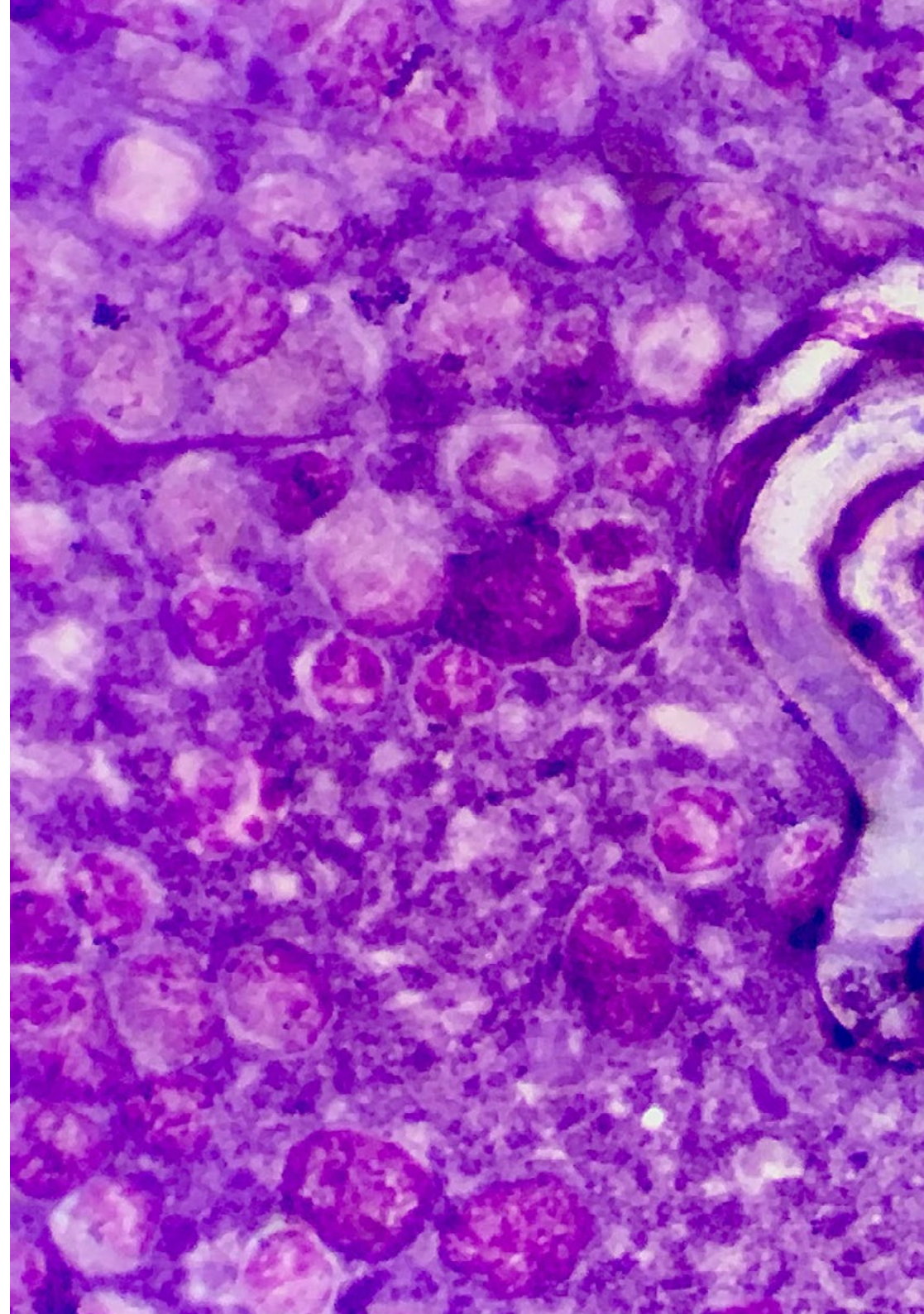
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*You will master state-of-the-art molecular techniques for the rapid and accurate identification of pathogenic microorganisms”*

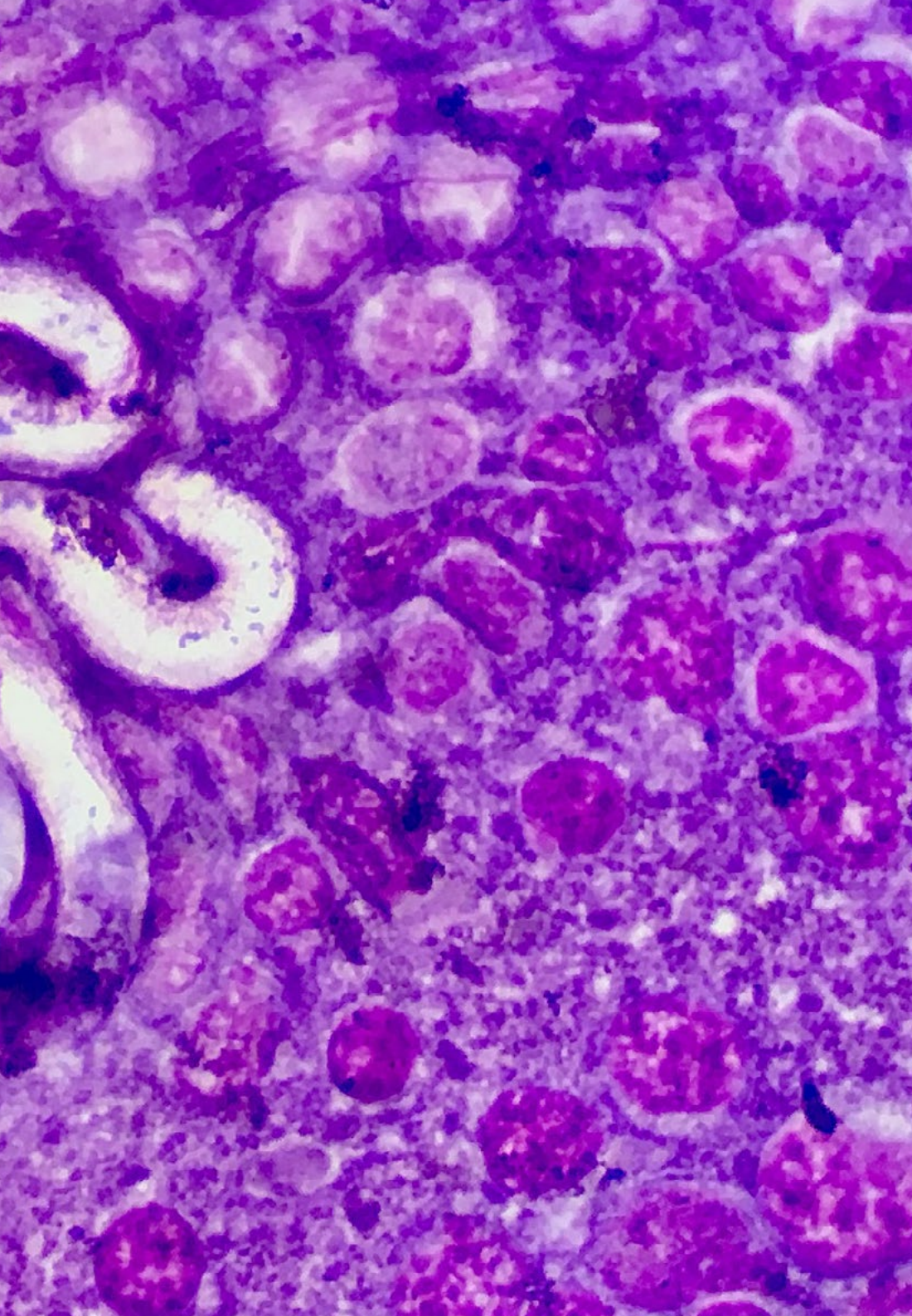


## Module 1. Antibiotics and Antimicrobial Treatments of the Future

- 1.1. Research, Approval, and Commercialization of New Antibiotics
  - 1.1.1. Antimicrobial Research
  - 1.1.2. Antimicrobial Approval Process
  - 1.1.3. Antimicrobial Marketing and Large Pharmaceutical Companies
- 1.2. Ongoing Clinical Trials for the Approval of New Antibiotics
  - 1.2.1. New Clinical Trials on Antimicrobials
- 1.3. Old Antibiotics with New Uses
  - 1.3.1. The Role of Old Antibiotics with New Uses
  - 1.3.2. Antimicrobial Withdrawal
  - 1.3.3. Chemical Alterations of Old Antimicrobials
- 1.4. Treatment Goals and New Ways to Fight Infections: What's New in Research
  - 1.4.1. New Treatment Goals
  - 1.4.2. New Ways to Treat Sepsis
- 1.5. Monoclonal Antibodies in Infections: Present and Future
  - 1.5.1. Origin and Emergence of Monoclonal Antibodies
  - 1.5.2. Classification
  - 1.5.3. Clinical Uses
  - 1.5.4. Impact Results in Infectious Diseases
- 1.6. Other Drugs to Regulate and Stimulate Immune Response against Infection
  - 1.6.1. Drugs to Regulate and Control the Immune Response
- 1.7. Futuristic Antibiotics
  - 1.7.1. The Future of Antimicrobials
  - 1.7.2. Antibiotics of the Future







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*A program designed to keep abreast of recent trends in the field of Antibiotics and Antimicrobial Therapies of the future. Enroll now!”*



# 05

# Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.





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*TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”*

## The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

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*At TECH you will NOT have live classes  
(which you might not be able to attend)”*



### The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

“*TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want*”



## Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.





## Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

*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.*



## A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



*The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule”*

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

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

## The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the quality of teaching, quality of materials, course structure and objectives is excellent. Not surprisingly, the institution became the best rated university by its students on the Trustpilot review platform, obtaining a 4.9 out of 5.

*Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.*

*You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.*



As such, the best educational materials, thoroughly prepared, will be available in this program:



#### 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.



#### Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



#### 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 exclusive educational system for presenting multimedia content 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 education.







**Case Studies**

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.



**Testing & Retesting**

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.



**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 for 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

This Postgraduate Certificate in Antibiotics and Antimicrobial Therapies of the Future guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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

This private qualification will allow you to obtain a **Postgraduate Certificate in Antibiotics and Antimicrobial Therapies of the Future** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Antibiotics and Antimicrobial Therapies of the Future**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



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





**Postgraduate Certificate**  
Antibiotics and Antimicrobial  
Therapies of the Future

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