

Postgraduate Certificate

New Antimicrobial Molecules for Nursing



Postgraduate Certificate New Antimicrobial Molecules for Nursing

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

Website: www.techtute.com/us/nursing/postgraduate-certificate/new-antimicrobial-molecules-nursing

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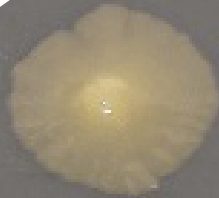
Certificate

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01

Introduction

A report from the Centers for Disease Control and Prevention reveals that more than 2.8 million people suffer antibiotic-resistant infections each year, resulting in more than 35,000 deaths. In this regard, nursing professionals have become a crucial element in ensuring the effectiveness and safety of treatments. These experts have the responsibility to stay at the forefront of New Antimicrobial Molecules to improve the quality of patient care and contribute to the fight against antimicrobial resistance. In this scenario, TECH is launching an innovative university program focused on the latest antimicrobial therapies and their mechanisms of action. In addition, it is taught in a 100% online modality.



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Thanks to this Postgraduate Certificate, based on Relearning, you will be able to diagnose bacterial infections using the New Antimicrobial Molecules in an effective way”

The World Health Organization considers antimicrobial resistance to be one of the most critical challenges to global public health. It predicts that infections caused by antibiotic-resistant bacteria could cause up to 10 million deaths annually in the coming years. In response to this crisis, the scientific community has developed innovative antimicrobial molecules that offer hope in the fight against resistant pathogens. However, their success depends largely on proper administration and monitoring. Therefore, it is essential for nurses to be informed about these developments in order to improve the quality of care for their patients.

In this context, TECH presents a revolutionary Postgraduate Certificate in New Antimicrobial Molecules for Nursing. The academic itinerary will delve into the methods of discovery of these elements, paying attention to aspects such as advances in screening technology, drug design or functional genomics. In line with this, the syllabus will analyze a wide range of new drugs (among which penicillins, cyclic lipopeptides or monobactams stand out), delving into their mechanisms of action, therapeutic uses and adverse effects. During the course of the program, graduates will obtain competencies to apply infection prevention and control protocols.

On the other hand, the program will be taught 100% online. This will make it possible for nurses to combine their studies with the rest of their regular duties, since the schedules and evaluation chronograms can be planned individually. At the same time, they will only need a device with Internet access to access the Virtual Campus and have access to high quality contents. Likewise, in this digital environment they will find a library full of multimedia resources, such as infographics or interactive summaries, which will strengthen their skills in a dynamic way.

This **Postgraduate Certificate in New Antimicrobial Molecules for Nursing** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ The development of practical cases presented by experts in Microbiology, Medicine and Parasitology
- ♦ 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



You will have the best multimedia resources to enrich your learning and put what you have studied into practice in a much easier way”

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You will learn more about the most innovative strategies for rational drug design”

The program’s teaching staff includes professionals from the field who contribute their work experience to this educational 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 and experienced experts.

Do you want to develop skills to interpret the scientific evidence related to New Antimicrobial Molecules? Achieve it with this program in only 180 hours.

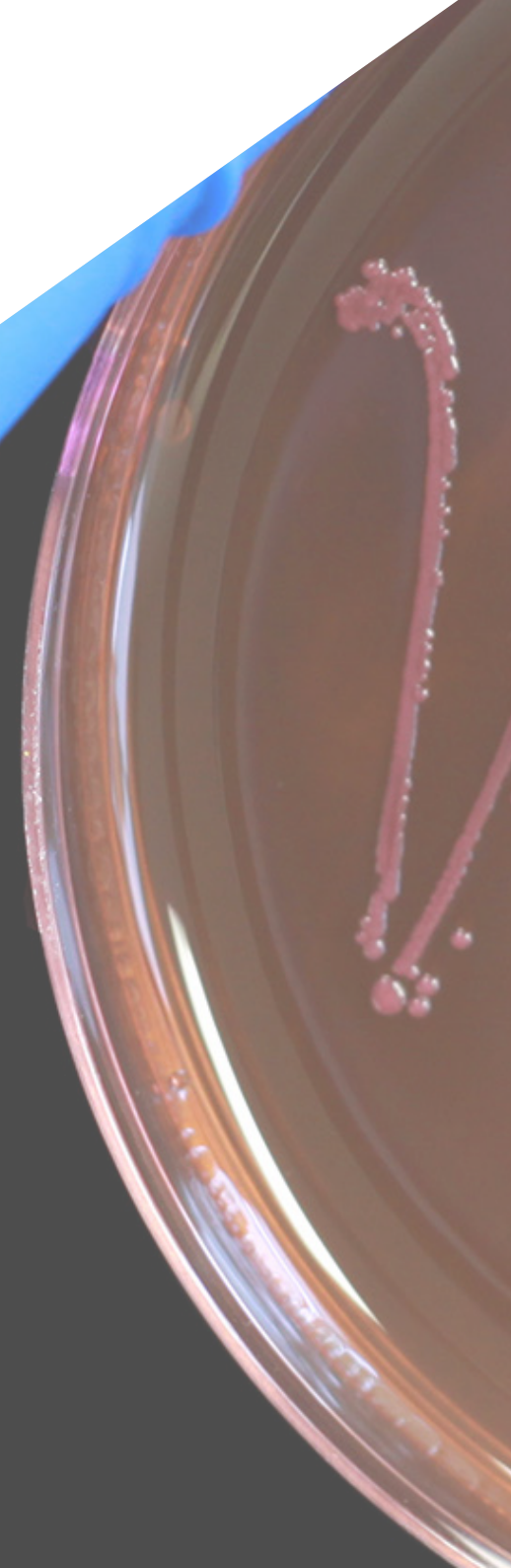
The 100% online methodology of this program will allow you to enjoy excellent learning without depending on strict pre-established schedules.



02

Objectives

Through this Postgraduate Certificate, Nursing personnel will have a holistic knowledge of New Antimicrobial Molecules, including their spectrum of activity and clinical applications. At the same time, graduates will be highly qualified to rationally administer these elements, minimizing the risk of adverse effects and resistance. Experts will also apply strategies to reduce the incidence of nosocomial infections using innovative therapeutic options. In addition, nurses will acquire the skills to educate patients on the proper use of new antimicrobial molecules and the importance of completing treatments.



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You will apply the most effective infection control strategies, especially in clinical settings.”



General Objectives

- ♦ Understand how bacterial resistance evolves as new antibiotics are introduced into clinical practice
- ♦ Understand the colonization and infection of patients in Intensive Care Units (ICUs), the different types and risk factors associated with infection
- ♦ Evaluate the impact of Nosocomial Infections in the critically ill patient, including the importance of risk factors and their impact on length of stay in the ICU
- ♦ Analyze the effectiveness of infection prevention strategies, including the use of quality indicators, evaluation tools and continuous improvement tools
- ♦ Understand the pathogenesis of Gram-negative Infections, including the factors related to these bacteria and patients themselves
- ♦ Examine the main infections by Gram Positive Bacteria, including their natural habitat, Nosocomial Infections and community-acquired infections
- ♦ Determine the clinical significance, resistance mechanisms and treatment options for different Gram-positive Bacteria
- ♦ Substantiate the importance of Proteomics and Genomics in the Microbiology laboratory including recent advances and technical and bioinformatics challenges
- ♦ Acquire knowledge on the dissemination of resistant bacteria in food production
- ♦ Study the presence of multidrug-resistant bacteria in the environment and wildlife, as well as to understand their potential impact on public health
- ♦ Acquire expertise on innovative antimicrobial molecules, including antimicrobial peptides and bacteriocins, bacteriophage enzymes and nanoparticles
- ♦ Develop expertise in the discovery methods for new antimicrobial molecules
- ♦ Gain specialized knowledge on Artificial Intelligence (AI) in Microbiology, including current expectations, emerging areas and its cross-cutting nature
- ♦ Understand the role that AI will play in Clinical Microbiology, including the technical lines and challenges for its implementation and deployment in laboratories



Specific Objectives

- Analyze the mechanisms of action, antimicrobial spectrum, therapeutic uses and adverse effects of new antimicrobial molecules
- Differentiate new antimicrobial molecules among the antibiotic families: penicillins, cephalosporins, carbapenemics, glycopeptides, macrolides, tetracyclines, aminoglycosides, quinolones and others



The emphasis placed on the practical and real clinical cases that you will be able to study will help you enormously in the contextualization of the entire program”

03

Course Management

For the design and delivery of this Postgraduate Certificate, TECH brings together true references in the field of New Antimicrobial Molecules. These professionals make up the teaching staff, so they have been responsible for developing a myriad of teaching materials that stand out both for their excellent quality and full applicability to the needs of today's labor market. In this way, nurses will embark on a high-intensity academic experience that will not only optimize their daily practice, but also broaden their professional horizons considerably.





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You will access a syllabus designed by a reputable faculty specialized in New Antimicrobial Molecules, which will guarantee you successful learning”

Management



Dr. Ramos Vivas, José

- Director of the Banco Santander-Universidad Europea del Atlántico Chair in Innovation
- Researcher at the Center for Innovation and Technology of Cantabria (CITICAN)
- Academic of Microbiology and Parasitology at the European University of the Atlantic
- Founder and former director of the Cellular Microbiology Laboratory of the Valdecilla Research Institute (IDIVAL)
- PhD in Biology from the University of León
- Doctor in Sciences from the University of Las Palmas de Gran Canaria
- Degree in Biology from the University of Santiago de Compostela
- Master's Degree in Molecular Biology and Biomedicine from the University of Cantabria
- Member of: CIBERINFEC (MICINN-ISCIII), Member of the Spanish Society of Microbiology and Member of the Spanish Network of Research in Infectious Pathology

Professors

Dr. Pacheco Herrero, María del Mar

- ◆ Project Manager at the European University of the Atlantic, Cantabria
- ◆ Principal Researcher at the Pontifical Catholic University Madre y Maestra (PUCMM), Dominican Republic
- ◆ Founder and Director of the Neuroscience Research Laboratory at PUCMM, Dominican Republic
- ◆ Scientific Director of the Dominican Republic Node of the Latin American Brain Bank for the Study of Neurodevelopmental Diseases, University of California, USA.
- ◆ Researcher at the Ministry of Higher Education, Science and Technology, Dominican Republic
- ◆ Researcher at the German Academic Exchange Service (Deutscher Akademischer Austauschdienst) (DAAD), Germany
- ◆ International Advisor at the National Dementia BioBank of the National Autonomous University of Mexico
- ◆ Postdoctoral Research Stays at the University of Antioquia (Colombia) and the University of Lincoln (UK)
- ◆ PhD in Neurosciences from the University of Cadiz
- ◆ Master's Degree in Biomedicine from the University of Cadiz
- ◆ Master's Degree in Monitoring of Clinical Trials and Pharmaceutical Development INESEM Business School
- ◆ Degree in Biochemistry from the University of Cordoba
- ◆ Member of: National Career of Researchers in Science, Technology and Innovation, Dominican Republic and Mexican Council of Neurosciences

04

Structure and Content

Through this university program, nurses will have a solid understanding of the mechanisms of action of new antimicrobial molecules. The syllabus will comprehensively analyze emerging drugs such as penicillins, cephalosporins or carbapenems in terms of their antimicrobial spectra and therapeutic uses. During the course of the program, graduates will develop advanced competences to individualize antimicrobial treatments based on the clinical profile of patients and the results of bacterial sensitivity tests. In addition, the study plan will delve into both the challenges and opportunities in the development of new antimicrobial molecules.



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You will be able to implement and supervise infection prevention protocols that include the use of New Antimicrobial Molecules”

Module 1. New Antimicrobial Molecules

- 1.1. New Antimicrobial Molecules
 - 1.1.1. The Need for New Antimicrobial Molecules
 - 1.1.2. Impact of New Molecules on Antimicrobial Resistance
 - 1.1.3. Challenges and Opportunities in the Development of New Antimicrobial Molecules
- 1.2. Methods of Discovery of New Antimicrobial Molecules
 - 1.2.1. Traditional Discovery Approaches
 - 1.2.2. Advances in Screening Technology
 - 1.2.3. Rational Drug Design Strategies
 - 1.2.4. Biotechnology and Functional Genomics
 - 1.2.5. Other Innovative Approaches
- 1.3. New Penicillins: New Drugs, their Future Role in Anti-Infective Therapeutics
 - 1.3.1. Classification
 - 1.3.2. Mechanism of Action
 - 1.3.3. Antimicrobial Spectrum
 - 1.3.4. Therapeutic Uses
 - 1.3.5. Adverse Effects
 - 1.3.6. Presentation and Dosage
- 1.4. Cephalosporins
 - 1.4.1. Classification
 - 1.4.2. Mechanism of Action
 - 1.4.3. Antimicrobial Spectrum
 - 1.4.4. Therapeutic Uses
 - 1.4.5. Adverse Effects
 - 1.4.6. Presentation and Dosage
- 1.5. Carbapenemics and Monobactams
 - 1.5.1. Classification
 - 1.5.2. Mechanism of Action
 - 1.5.3. Antimicrobial Spectrum
 - 1.5.4. Therapeutic Uses
 - 1.5.5. Adverse Effects
 - 1.5.6. Presentation and Dosage
- 1.6. Cyclic Glycopeptides and Lipopeptides
 - 1.6.1. Classification
 - 1.6.2. Mechanism of Action
 - 1.6.3. Antimicrobial Spectrum
 - 1.6.4. Therapeutic Uses
 - 1.6.5. Adverse Effects
 - 1.6.6. Presentation and Dosage
- 1.7. Macrolides, Ketolides and Tetracyclines
 - 1.7.1. Classification
 - 1.7.2. Mechanism of Action
 - 1.7.3. Antimicrobial Spectrum
 - 1.7.4. Therapeutic Uses
 - 1.7.5. Adverse Effects
 - 1.7.6. Presentation and Dosage
- 1.8. Aminoglycosides and Quinolones
 - 1.8.1. Classification
 - 1.8.2. Mechanism of Action
 - 1.8.3. Antimicrobial Spectrum
 - 1.8.4. Therapeutic Uses
 - 1.8.5. Adverse Effects
 - 1.8.6. Presentation and Dosage
- 1.9. Lincosamides, Streptogramins and Oxazolidinones
 - 1.9.1. Classification
 - 1.9.2. Mechanism of Action
 - 1.9.3. Antimicrobial Spectrum
 - 1.9.4. Therapeutic Uses
 - 1.9.5. Adverse Effects
 - 1.9.6. Presentation and Dosage



- 1.10. Rifamycins and other Developmental Antimicrobial Molecules
 - 1.10.1. Rifamycins: Classification
 - 1.10.1.2. Mechanism of Action
 - 1.10.1.3. Antimicrobial Spectrum
 - 1.10.1.4. Therapeutic Uses
 - 1.10.1.5. Adverse Effects
 - 1.10.1.6. Presentation and Dosage
- 1.10.2. Antibiotics of Natural Origin
- 1.10.3. Synthetic Antimicrobial Agents
- 1.10.4. Antimicrobial Peptides
- 1.10.5. Antimicrobial Nanoparticles

“ This program prepares you to meet the challenges in New Antimicrobial Molecules. Enroll now and experience immediate advancement in your career as a Nurse!”

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.



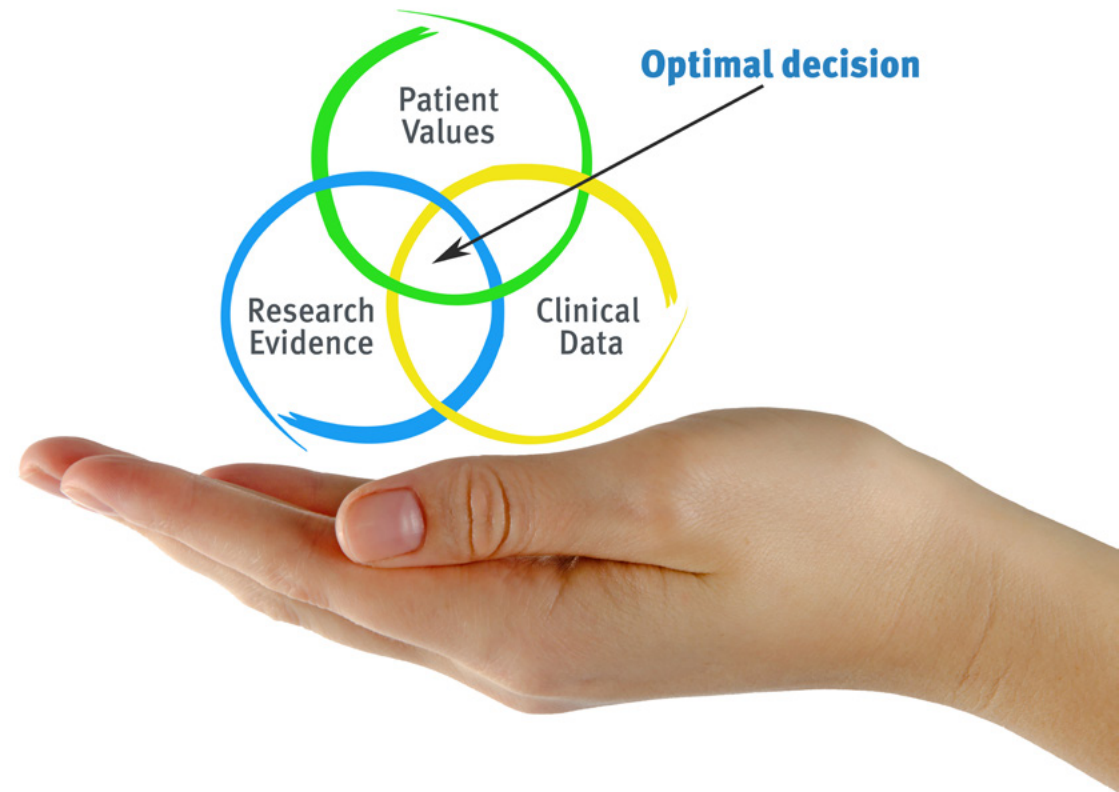
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Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH Nursing School we use the Case Method

In a given situation, what should a professional do? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Nurses learn better, faster, and more sustainably over time.

With TECH, nurses can experience a learning methodology that is shaking the foundations of traditional universities around the world.



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, in an attempt to recreate the real conditions in professional nursing 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. Nurses 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 nursing professional to better integrate knowledge acquisition into the hospital setting or primary care.
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.

This university is the first in the world to combine case studies with a 100% online learning system based on repetition combining a minimum of 8 different elements in each lesson, which is a real revolution compared to the simple study and analysis of cases.



The nurse 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 we have trained more than 175,000 nurses with unprecedented success in all specialties regardless of practical workload. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

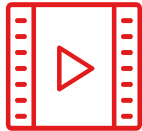
Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

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 produced by the specialists who teach the course, specifically for the course, so that the teaching content is really specific and precise.

These contents are then adapted in 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.



Nursing 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 of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch them as many times as you want.



Interactive Summaries

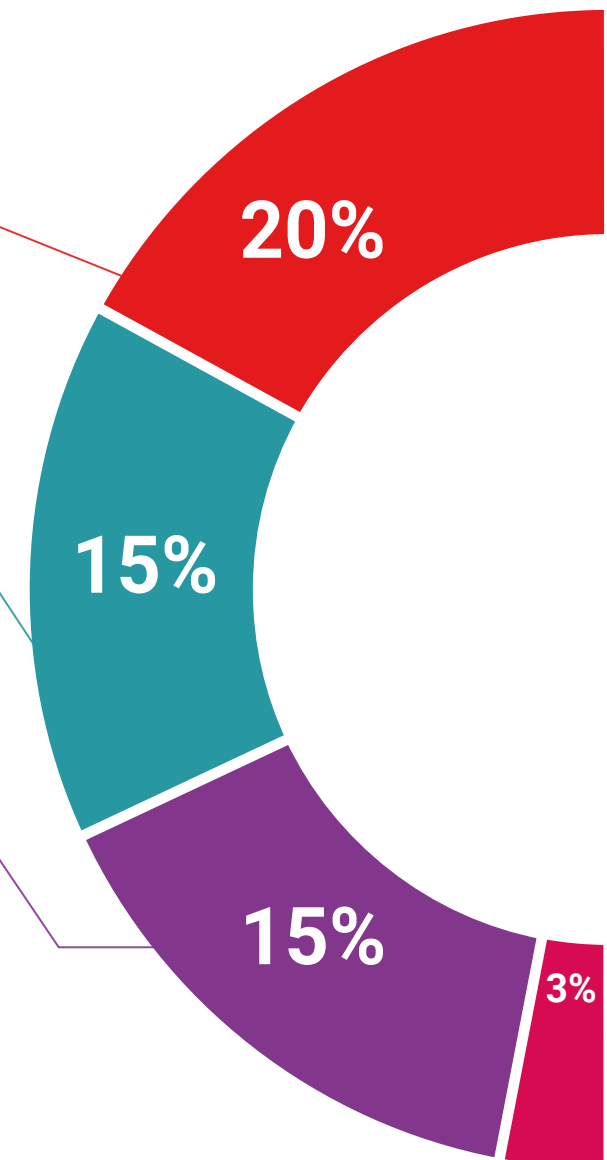
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

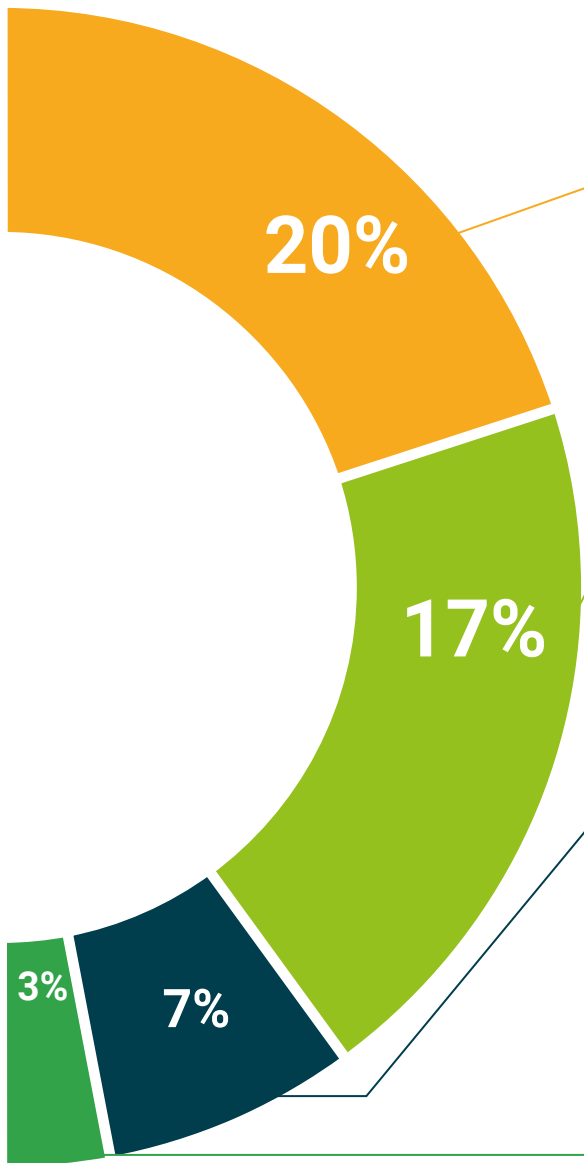
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



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, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



Testing & Retesting

The student's knowledge is periodically assessed and re-assessed throughout the program, through evaluative and self-evaluative activities and exercises: in this way, students can check how they are doing in terms of achieving their 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 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 Certificate in New Antimicrobial Molecules for Nursing 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 New Antimicrobial Molecules for Nursing** 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.

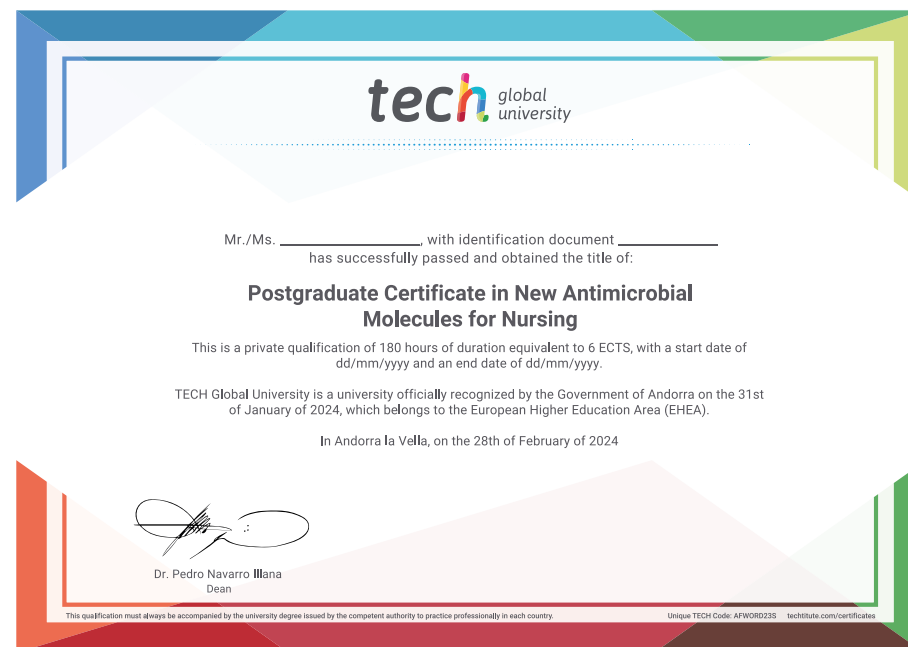
This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in New Antimicrobial Molecules for Nursing**

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.

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



Postgraduate Certificate New Antimicrobial Molecules for Nursing

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Postgraduate Certificate

New Antimicrobial Molecules for Nursing