Postgraduate Diploma

Advanced Strategies against Multidrug-Resistant Bacteria

tech global university

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Postgraduate Diploma
Advanced Strategies against Multidrug-Resistant Bacteria

- Modality: **online**
- Duration: **6 months**
- Certificate: **TECH Global University**
- Accreditation: **18 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: **www.techtitute.com/us/pharmacy/postgraduate-diploma/postgraduate-diploma-advanced-strategies-against-multidrug-resistant-bacteria**

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01

Introduction

With the alarming increase in multidrug-resistant bacteria, pharmacists are key in the implementation of preventive and therapeutic measures. Therefore, continuous specialization on the prudent use of antibiotics, the promotion of rapid diagnostic techniques, and the promotion of new therapies, such as combination drugs and non-antibiotic agents, are essential pillars in the fight against this growing challenge. In this situation, TECH has developed a complete online program, which provides total flexibility and adapts according to the personal needs of the student, avoiding the need to physically attend a place or comply with fixed schedules. In addition, it is based on the innovative learning methodology called Relearning.

Thanks to this 100% online Postgraduate Diploma you will deepen your knowledge of molecular techniques, new antimicrobial molecules, and the application of Artificial Intelligence in Clinical Microbiology"

With the worrying increase in untreatable infections, due to multiple resistances, the importance of epidemiological surveillance, rigorous implementation of infection control measures, and continuous education of healthcare personnel is emphasized. Here, pharmacists are vital in ensuring the appropriate use of antibiotics and promoting responsible prescribing practices.

This is how this Postgraduate Diploma is born, to provide pharmacists with in-depth and up-to-date knowledge on key innovations in the field of Microbiology and antimicrobial therapeutics. In this sense, the use of advanced molecular techniques, such as CRISPR-Cas9 gene editing, will be examined in detail, highlighting its specific mechanism of action and its potential applications in the fight against multidrug-resistant bacteria.

Likewise, the exhaustive evaluation of new antimicrobial molecules will be addressed, analyzing their mechanisms of action, antimicrobial spectrum, therapeutic uses and adverse effects. Therefore, professionals will differentiate between the different families of antibiotics and will critically evaluate the characteristics that make each new molecule a promising option against resistant infections.

Finally, the application of Artificial Intelligence will be introduced, showing how AI algorithms and models can revolutionize the way in which bacterial resistance is studied and combated. In fact, its historical foundations and evolution in this context, as well as its practical implementation in clinical laboratories and microbiological research will be discussed. In addition, synergistic strategies between AI and Public Health will be explored, focusing on outbreak management, epidemiological surveillance and treatment personalization.

These detailed materials will provide graduates with a 100% online methodology, allowing them to structure their study schedule according to their personal and professional commitments. Additionally, the sophisticated Relearning system will be integrated, which facilitates the deep understanding of key concepts through repetition. In this way, you will be able to learn at your own pace and acquire a complete mastery of the latest scientific evidence available.

This **Postgraduate Diploma in Advanced Strategies against Multidrug-Resistant Bacteria** 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 gain an in-depth understanding of the most advanced molecular techniques and explore innovative antimicrobial molecules, differentiating their mechanisms of action and therapeutic applications"

You will analyze AI algorithms and models for protein structure prediction, identification of resistance mechanisms, and analysis of large volumes of genomic data. Enroll now!"

You will delve into emerging molecular techniques, highlighting the revolutionary CRISPR-Cas9 gene editing, through the best teaching materials in the academic market, at the forefront of technology and education.

Bet on TECH! You will differentiate between various families of antibiotics, such as penicillins, cephalosporins, carbapenemics, and others, essential for an informed and strategic prescription in pharmaceutical practice.

The program's teaching staff includes professionals from the industry who contribute their work experience to this 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.

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Objectives

The main objective of the program will be to qualify pharmacists with specialized knowledge and advanced tools to effectively face the growing challenge of Multidrug-Resistant Bacteria. Therefore, emerging strategies, such as CRISPR-Cas9 gene editing, and the exhaustive analysis of new antimicrobial molecules, will be deepened to optimize therapeutic management and minimize adverse effects. In addition, Artificial Intelligence will be integrated into Clinical Microbiology, equipping professionals with skills to use advanced algorithms and models in the early identification of resistance, as well as in the personalization of treatments.

This Postgraduate Diploma has been designed to equip pharmacists with specialized knowledge and advanced skills needed to meet the growing challenge of Multidrug-Resistant Bacteria"

General Objectives

- 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

You will become familiar with the strategic use of Artificial Intelligence in Microbiology, facilitating the prediction of resistance, the optimization of treatments, and the implementation of Public Health practices"

Specific Objectives

Module 1. Emerging Strategies for Multidrug-Resistant Bacteria

- Examine in depth the mechanism of different molecular techniques for use against multiresistant bacteria, including CRISPR-Cas9 gene editing, its molecular mechanism of action and its potential applications

Module 2. New Antimicrobial Molecules

- 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

Module 3. Artificial Intelligence in Clinical Microbiology and Infectious Diseases

- Analyze the fundamentals of AI in Microbiology, including its history and evolution, technologies that can be used in Microbiology and research objectives
- Include AI algorithms and models for protein structure prediction, identification and understanding of resistance mechanisms, and analysis of genomic Big Data
- Apply AI in machine learning techniques for bacterial identification and its practical implementation in clinical and Microbiology research laboratories
- Explore synergy strategies with AI between Microbiology and Public Health, including infectious outbreak management, epidemiological surveillance, and personalized treatments

03

Course Management

The faculty are highly qualified and recognized experts in the fields of Microbiology, Parasitology, Molecular Biology, Neurosciences and Artificial Intelligence. In fact, these professionals have vast practical and academic experience in the study and research of Multidrug-Resistant Bacteria, as well as in the development of innovative strategies for their management. In addition to their experience, they are committed to the comprehensive specialization of the graduates, offering a practical and updated approach that incorporates the latest technologies and scientific advances.

The role of the faculty will be fundamental in providing you with the theoretical and practical tools necessary to face contemporary microbiological challenges with efficiency and professional responsibility"

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. Ocaña Fuentes, Aurelio

- Director of Research at the Bureau Veritas University Center, Camilo José Cela University
- Research Fellow at the Neurobehavioral Institute, Miami
- Researcher in the Area of Food Technology, Nutrition and Dietetics, Department of Applied Physical Chemistry, Autonomous University of Madrid
- Researcher in the Area of Human Physiology, Epidemiology and Public Health, Department of Health Sciences, Rey Juan Carlos University
- Researcher of the Training Plan for Research Personnel of the University of Alcalá
- D. in Health Sciences from the Rey Juan Carlos University
- Master's Degree in Research, Epidemiology and Public Health
- Diploma in Advanced Studies from Rey Juan Carlos University
- Degree in Chemical Sciences, specializing in Biochemistry, from the Complutense University of Madrid

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, Mexican Council of Neurosciences

Dr. Breñosa Martínez, José Manuel

- Project Manager at the Cantabria Centre for Industrial Research and Technology (CITICAN)
- Academic of Artificial Intelligence at the European University of the Atlantic (UNEAT), Cantabria
- Programmer and Simulation Developer at Ingemotions, Cantabria
- Researcher at the Centre for Automation and Robotics (CAR: UPM-CSIC), Madrid
- PhD in Automatics and Robotics at the Polytechnic University of Madrid
- Master's Degree in Automatics and Robotics at the Polytechnic University of Madrid
- Degree in Industrial Engineering at the Polytechnic University of Madrid

04

Structure and Content

The contents of the course include a detailed analysis of advanced molecular techniques, such as CRISPR-Cas9 gene editing, exploring its potential application in genetic modification aimed at combating bacterial resistance. In addition, new antimicrobial molecules will be examined in depth, including their mechanisms of action, spectrum of activity and specific therapeutic applications, differentiating them among several crucial antibiotic families in clinical practice. The innovative use of Artificial Intelligence in Clinical Microbiology and infectious diseases will also be addressed, delving into algorithms for resistance prediction and genomic data management.

This Postgraduate Diploma in Advanced Strategies against Multidrug-Resistant Bacteria will offer a comprehensive program for pharmacists, covering several fundamental aspects to face the growing threat"

Module 1. Emerging Strategies for Multidrug-Resistant Bacteria

1.1. CRISPR-Cas9 Gene Editing
- 1.1.1. Molecular Mechanism of Action
- 1.1.2. Applications
  - 1.1.2.1. CRISPR-Cas9 as a Therapeutic Tool
  - 1.1.2.2. Engineering of Probiotic Bacteria
  - 1.1.2.3. Rapid Detection of Resistance
  - 1.1.2.4. Elimination of Resistance Plasmids
  - 1.1.2.5. Development of New Antibiotics
  - 1.1.2.6. Safety and Stability
- 1.1.3. Limitations and Challenges

1.2. Temporary Collateral Sensitization (SCT)
- 1.2.1. Molecular Mechanism
- 1.2.2. Advantages and Applications of SCT
- 1.2.3. Limitations and Challenges

1.3. Gene Silencing
- 1.3.1. Molecular Mechanism
- 1.3.2. RNA Interference
- 1.3.3. Antisense Oligonucleotides
- 1.3.4. Benefits and Applications of Gene Silencing
- 1.3.5. Limitations

1.4. High-Throughput Sequencing
- 1.4.1. Stages of High-Throughput Sequencing
- 1.4.2. Bioinformatics Tools for Combating Multidrug-Resistant Bacteria
- 1.4.3. Challenges

1.5. Nanoparticles
- 1.5.1. Mechanisms of Action against Bacteria
- 1.5.2. Clinical Applications
- 1.5.3. Limitations and Challenges

1.6. Engineering of Probiotic Bacteria
- 1.6.1. Production of Antimicrobial Molecules
- 1.6.2. Bacterial Antagonism
- 1.6.3. Modulation of the Immune System
- 1.6.4. Clinical Applications
  - 1.6.4.1. Prevention of Nosocomial Infections
  - 1.6.4.2. Reducing the Incidence of Respiratory Infections
  - 1.6.4.3. Adjunctive Therapy in the Treatment of Urinary Tract Infections
  - 1.6.4.4. Prevention of Resistant Skin Infections
- 1.6.5. Limitations and Challenges

1.7. Antibacterial Vaccines
- 1.7.1. Types of Vaccines against Diseases Caused by Bacteria
- 1.7.2. Vaccines in Development against Major Multidrug-Resistant Bacteria
- 1.7.3. Challenges and Considerations

1.8. Bacteriophages
- 1.8.1. Mechanism of Action
- 1.8.2. Lytic Cycle of Bacteriophages
- 1.8.3. Lysogenic Cycle of Bacteriophages

1.9. Phage Therapy
- 1.9.1. Isolation and Transport of Bacteriophages
- 1.9.2. Purification and Handling of Bacteriophages in the Laboratory
- 1.9.3. Phenotypic and Genetic Characterisation of Bacteriophages
- 1.9.4. Preclinical and Clinical Trials
- 1.9.5. Compassionate Use of Phages and Success Stories

1.10. Antibiotic Combination Therapy
- 1.10.1. Mechanisms of Action
- 1.10.2. Efficacy and Risks
- 1.10.3. Challenges and Constraints
- 1.10.4. Combined Antibiotic and Phage Therapy

Module 2. New Antimicrobial Molecules

2.1. New Antimicrobial Molecules
- 2.1.1. The Need for New Antimicrobial Molecules
- 2.1.2. Impact of New Molecules on Antimicrobial Resistance
- 2.1.3. Challenges and Opportunities in the Development of New Antimicrobial Molecules

2.2. Methods of Discovery of New Antimicrobial Molecules
- 2.2.1. Traditional Discovery Approaches
- 2.2.2. Advances in Screening Technology
- 2.2.3. Rational Drug Design Strategies
- 2.2.4. Biotechnology and Functional Genomics
- 2.2.5. Other Innovative Approaches

2.3. New Penicillins: New Drugs, their Future Role in Anti-Infective Therapeutics
- 2.3.1. Classification
- 2.3.2. Mechanism of Action
- 2.3.3. Antimicrobial Spectrum
- 2.3.4. Therapeutic Uses
- 2.3.5. Adverse Effects
- 2.3.6. Presentation and Dosage

2.4. Cephalosporins
- 2.4.1. Classification
- 2.4.2. Mechanism of Action
- 2.4.3. Antimicrobial Spectrum
- 2.4.4. Therapeutic Uses
- 2.4.5. Adverse Effects
- 2.4.6. Presentation and Dosage

2.5. Carbapenemics and Monobactams
- 2.5.1. Classification
- 2.5.2. Mechanism of Action
- 2.5.3. Antimicrobial Spectrum
- 2.5.4. Therapeutic Uses
- 2.5.5. Adverse Effects
- 2.5.6. Presentation and Dosage

2.6. Cyclic Glycopeptides and Lipopeptides
- 2.6.1. Classification
- 2.6.2. Mechanism of Action
- 2.6.3. Antimicrobial Spectrum
- 2.6.4. Therapeutic Uses
- 2.6.5. Adverse Effects
- 2.6.6. Presentation and Dosage

2.7. Macrolides, Ketolides and Tetracyclines
- 2.7.1. Classification
- 2.7.2. Mechanism of Action
- 2.7.3. Antimicrobial Spectrum
- 2.7.4. Therapeutic Uses
- 2.7.5. Adverse Effects
- 2.7.6. Presentation and Dosage

2.8. Aminoglycosides and Quinolones
- 2.8.1. Classification
- 2.8.2. Mechanism of Action
- 2.8.3. Antimicrobial Spectrum
- 2.8.4. Therapeutic Uses
- 2.8.5. Adverse Effects
- 2.8.6. Presentation and Dosage

2.9. Lincosamides, Streptogramins and Oxazolidinones
- 2.9.1. Classification
- 2.9.2. Mechanism of Action
- 2.9.3. Antimicrobial Spectrum
- 2.9.4. Therapeutic Uses
- 2.9.5. Adverse Effects
- 2.9.6. Presentation and Dosage

2.10. Rifamycins and other Developmental Antimicrobial Molecules
- 2.10.1. Rifamycins: Classification
  - 2.10.1.1. Mechanism of Action
  - 2.10.1.2. Antimicrobial Spectrum
  - 2.10.1.3. Therapeutic Uses
  - 2.10.1.4. Adverse Effects
  - 2.10.1.5. Presentation and Dosage
- 2.10.1. Antibiotics of Natural Origin
- 2.10.2. Synthetic Antimicrobial Agents
- 2.10.3. Antimicrobial Peptides
- 2.10.4. Antimicrobial Nanoparticles

Module 3. Artificial Intelligence in Clinical Microbiology and Infectious Diseases

3.1. Artificial Intelligence (AI) in Clinical Microbiology and Infectious Diseases
- 3.1.1. Current Expectation of AI in Clinical Microbiology
- 3.1.2. Emerging Areas Interrelated to AI
- 3.1.3. Transversality of AI

3.2. Artificial Intelligence (AI) Techniques and other Complementary Technologies applied to Clinical Microbiology and Infectious Diseases
- 3.2.1. AI Logic and Models
- 3.2.2. Technologies for AI
  - 3.2.2.1. Machine Learning
  - 3.2.2.2. Deep Learning
  - 3.2.2.3. Data Science and Big Data

3.3. Artificial Intelligence (AI) in Microbiology
- 3.3.1. AI in Microbiology: History and Evolution
- 3.3.2. AI Technologies that can be Used in Microbiology
- 3.3.3. Research Objectives of AI in Microbiology
  - 3.3.3.1. Understanding Bacterial Diversity
  - 3.3.3.2. Exploring Bacterial Physiology
  - 3.3.3.3. Investigation of Bacterial Pathogenicity
  - 3.3.3.4. Epidemiological Surveillance
  - 3.3.3.5. Development of Antimicrobial Therapies
  - 3.3.3.6. Microbiology in Industry and Biotechnology

3.4. Classification and Identification of Bacteria using Artificial Intelligence (AI)
- 3.4.1. Machine Learning Techniques for Bacterial Identification
- 3.4.2. Taxonomy of Multi-Resistant Bacteria using AI
- 3.4.3. Practical Implementation of AI in Clinical and Research Laboratories in Microbiology

3.5. Bacterial Protein Decoding
- 3.5.1. AI Algorithms and Models for Protein Structure Prediction
- 3.5.2. Applications in the Identification and Understanding of Resistance Mechanisms
- 3.5.3. Practical Application AlphaFold and Rosetta

3.6. Decoding the Genome of Multi-Resistant Bacteria
- 3.6.1. Identification of Resistance Genes
- 3.6.2. Genomic Big Data Analysis: AI-Assisted Sequencing of Bacterial Genomes
- 3.6.3. Practical Application Identification of Resistance Genes

3.7. Artificial Intelligence (AI) Strategies in Microbiology and Public Health
- 3.7.1. Infectious Outbreak Management
- 3.7.2. Epidemiological Surveillance
- 3.7.3. AI for Personalized Treatments

3.8. Artificial Intelligence (AI) to Combat Antibiotic Resistance in Bacteria
- 3.8.1. Optimizing Antibiotic Use
- 3.8.2. Predictive Models for the Evolution of Antimicrobial Resistance
- 3.8.3. Targeted Therapy Based on Development of New Antibiotics by IA

3.9. Future of Artificial Intelligence in Microbiology
- 3.9.1. Synergies between Microbiology and IA
- 3.9.2. Lines of AI Implementation in Microbiology
- 3.9.3. Long-Term Vision of the Impact of AI in the Fight against Multi-Drug Resistant Bacteria

3.10. Technical and Ethical Challenges in the Implementation of Artificial Intelligence (AI) in Microbiology
- 3.10.1. Legal Considerations
- 3.10.2. Ethical and Liability Considerations
- 3.10.3. Barriers to AI Implementation
  - 3.10.3.1. Technical Barriers
  - 3.10.3.2. Social Barriers
  - 3.10.3.3. Economic Barriers
  - 3.10.3.4. Cybersecurity

The program's integrative approach will empower you to lead effective and sustainable initiatives in resistant infection management and control, being a key player in Public Health and microbiological safety"

05

Methodology

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

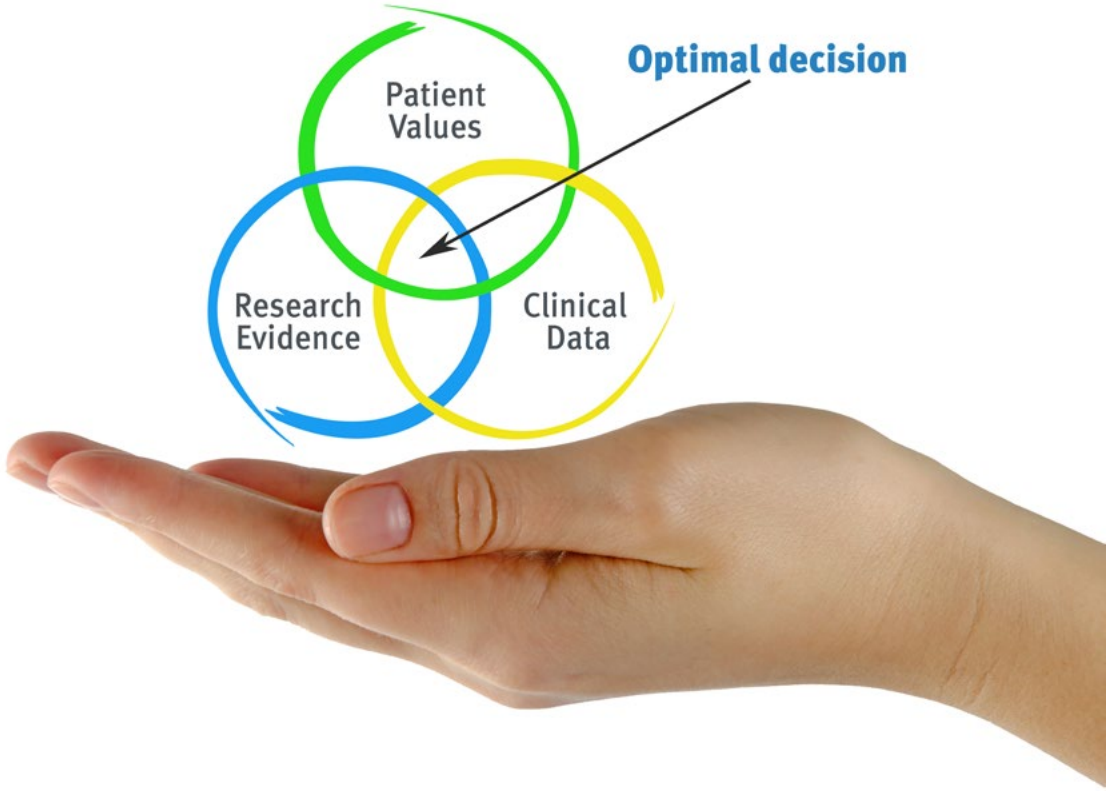
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

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

At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will be confronted with multiple simulated clinical cases based on real patients, in which they will have to investigate, establish hypotheses and ultimately, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Pharmacists learn better, more quickly and more sustainably over time.

With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.



According to Dr. 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, attempting to recreate the actual conditions in a pharmacist's professional practice.

Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method"

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

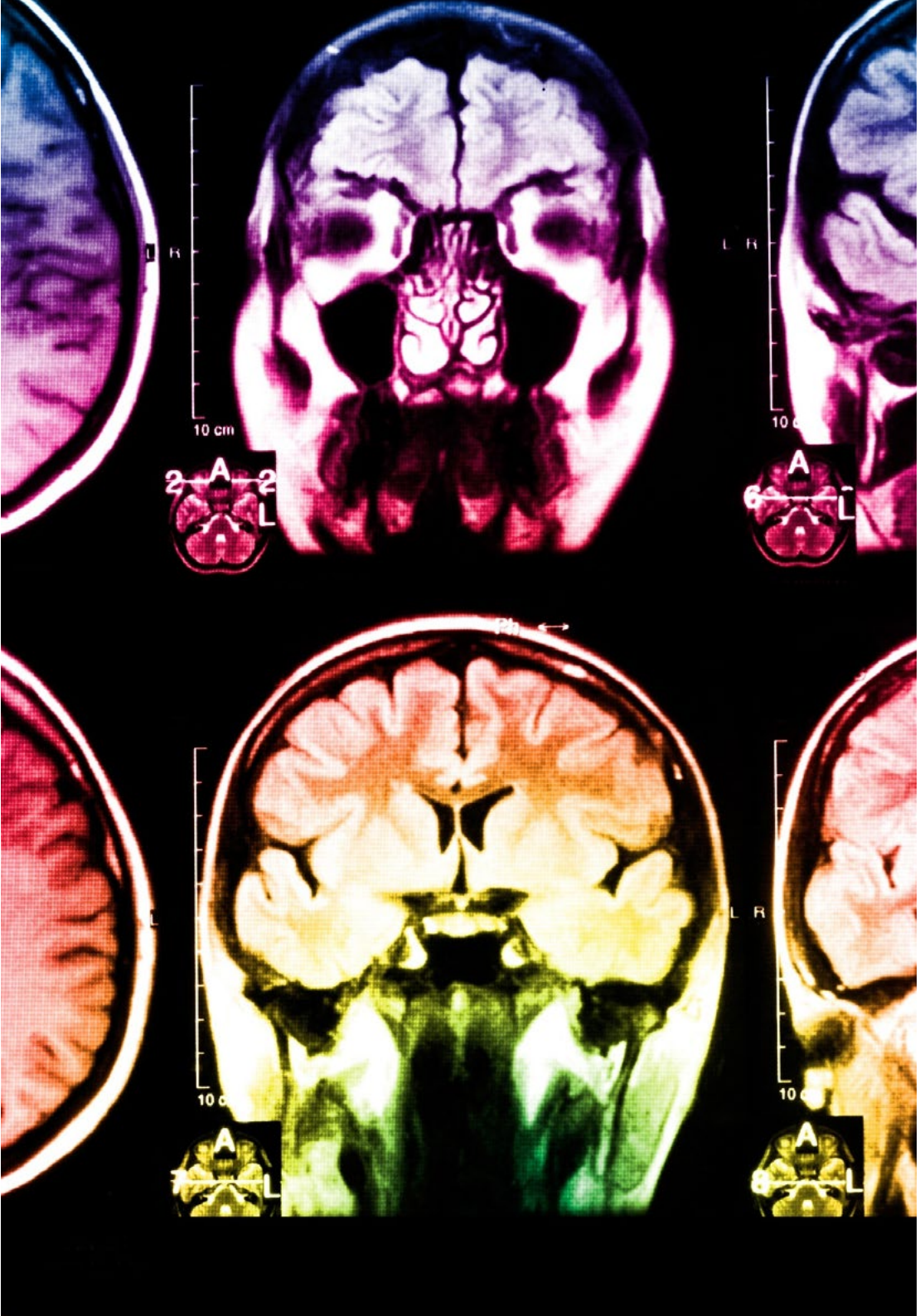
1. Pharmacists who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts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

Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

Our University is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, which represent a real revolution with respect to simply studying and analyzing cases.

Pharmacists will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.



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

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

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

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

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

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

Study Material

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

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

Video Techniques and Procedures

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

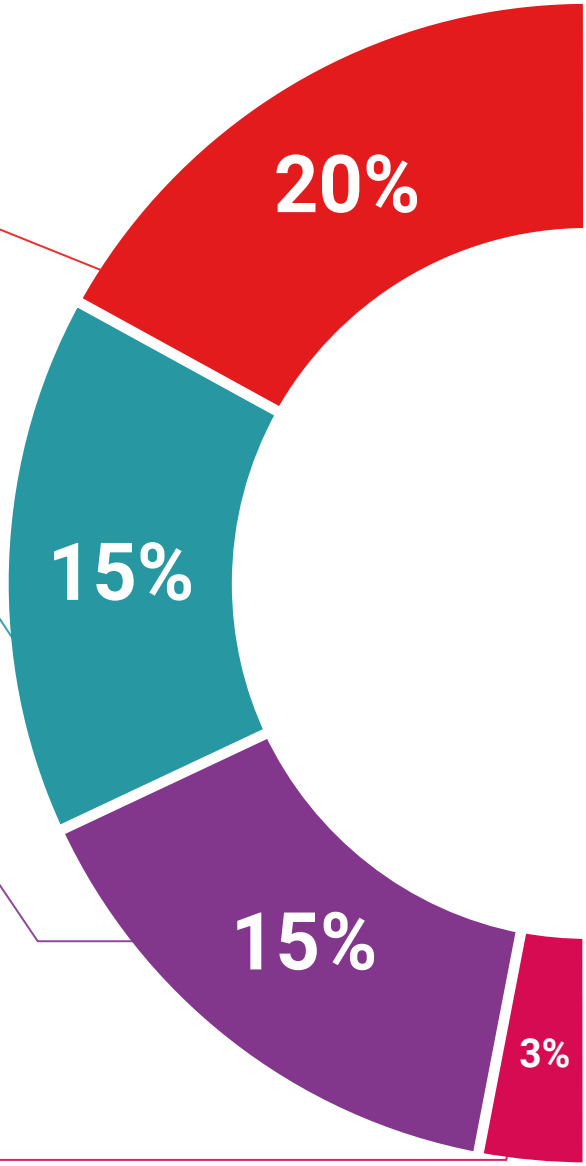
Interactive Summaries

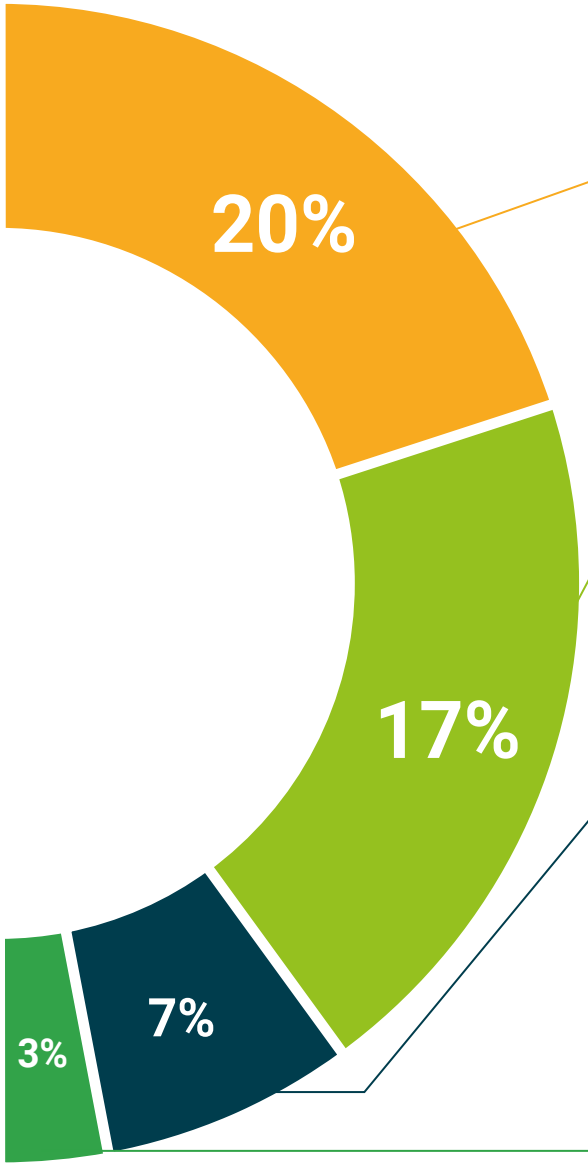
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

Additional Reading

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





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the expert will guide you through focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.

Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.

06

Certificate

The Postgraduate Diploma in Advanced Strategies against Multidrug-Resistant Bacteria guarantees, in addition to the most accurate and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University.

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 Diploma in Advanced Strategies against Multidrug-Resistant Bacteria** 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 Diploma in Advanced Strategies against Multidrug-Resistant Bacteria**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**


tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Diploma in Advanced Strategies against Multidrug-Resistant Bacteria

This is a private qualification of 540 hours of duration equivalent to 18 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

*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.

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- Duration: **6 months**
- Certificate: **TECH Global University**
- Accreditation: **18 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Postgraduate Diploma

Advanced Strategies against Multidrug-Resistant Bacteria

tech global university