

Hybrid Master's Degree

Clinical Infectious Diseases and
Antibiotic Therapy



Hybrid Master's Degree

Clinical Infectious Diseases and Antibiotic Therapy

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Global University

Credits: 60 + 4 ECTS

Website: www.techtute.com/us/medicine/hybrid-master-degree/hybrid-master-degree-clinical-infectious-diseases-antibiotic-therapy

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01

Introduction

5 out of the 10 leading causes of death in countries with scarce economic resources are related to infectious diseases, as revealed in a report prepared by the WHO. This fact has led to a greater sensitivity to save the lives of patients affected by these pathologies and, therefore, highly trained doctors are needed for their treatment. For this reason, TECH has designed this program, which will allow professionals to increase their diagnostic and therapeutic knowledge to combat tropical, bacterial or viral diseases. In addition, you will do so by combining 100% online theoretical teaching with a hospital internship where you will learn to transfer all your knowledge into practice to improve your health care.





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This Hybrid Master's Degree will allow you to learn the most up to date treatments to combat diseases such as tuberculosis or urinary tract infections and gynecological infections in women"

Despite the constant struggle to control them, infectious pathologies continue to violently strike a large proportion of the population, especially those with low economic and sanitary capacity. Diseases such as malaria, tuberculosis and HIV take a large number of lives in developing countries, becoming some of the main causes of death. Because of this, much research is focused on the search for new medications that can completely eradicate several of these pathologies, some of them being very successful in alleviating the effects produced in patients. Given this important benefit, doctors who are experts in combating infectious diseases must manage the proper administration of these modern therapeutic methods.

For this reason and with the aim of facilitating the doctor the increase and updating of their skills in this area in a theoretical and practical way, TECH has created this Hybrid Master's Degree

Throughout 12 months of learning, the student will learn the latest mechanisms supported by the latest scientific evidence to combat antimicrobial resistance in different types of infectious diseases. Furthermore, students will manage the updated procedures for the performance of microbiological studies for the detection of these pathologies or will face the most common mycotic diseases with experience.

Through the 100% online method offered by TECH, this theoretical phase will allow students to fully adapt their learning to their personal, academic and professional needs. Once completed, you will have access for 3 weeks to a practical internship in a prestigious hospital where, as part of a great team, you will fully develop advanced medical skills in this field.

This **Hybrid Master's Degree in Clinical Infectious Diseases and Antibiotic Therapy** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ Development of more than 100 clinical cases presented by medical experts in the diagnosis and treatment of various types of infectious diseases
- ♦ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ Up-to-date procedures to perform microbiological studies to determine the extent of the infectious pathology suffered by the patient
- ♦ Advanced treatments to combat a variety of bacterial and viral diseases
- ♦ Modern mechanisms to counteract antibiotic resistance to various diseases in different types of patients
- ♦ All of this will be complemented by 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
- ♦ Furthermore, you will be able to carry out a clinical internship in one of the best hospital centers



It combines an excellent theoretical education with a practical internship in a hospital center to put you at the forefront of infectious disease treatment"

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Enroll in this program to gain access to the most up-to-date teaching resources on the market in Clinical Infectious Diseases and Antibiotic Therapeutics"

In this Hybrid Master's Degree program, of a professionalizing nature and hybrid learning modality, the program is aimed at updating those doctors whose functions are closely linked to the diagnosis and treatment of different types of infectious diseases. The contents are based on the latest scientific evidence, and oriented in an educational way to integrate theoretical knowledge Healthcare practice, and the theoretical-practical elements will facilitate the updating of knowledge and will allow decision making in patient management.

Thanks to the multimedia content, developed with the latest educational technology Medicine professionals will benefit from situated and contextual learning, which means a simulated environment that will provide immersive learning programmed to learn in real situations. This program is designed around Problem-Based Learning, whereby the physician must try to solve the different professional practice situations that arise during the course. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

Adapt your study completely to your personal needs thanks to the 100% online method offered by TECH in its theoretical part.

Learn how to improve your therapeutic skills with real patients in simulated environments through this Hybrid Master's Degree.



02

Why Study this Hybrid Master's Degree?

In a field that is constantly being updated as is the field of infectious diseases, it is as relevant to know all the advances from a theoretical perspective as it is to master the procedures to transfer them to the real work environment with patients suffering from various pathologies. For this reason, TECH has created this program, through which the student will combine the learning of new diagnostic and therapeutic methods for these infections with a practical internship of 3 weeks in a hospital center.



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This academic institution gives you the opportunity to integrate a fully up-to-date theoretical education in infectious diseases with a 120-hour internship in a leading hospital"

1. Updating from the Latest Technology Available

The field of infectious diseases is in constant evolution due to the continuous emergence of new pathologies, as well as medications to combat them and those that were already widespread in society. Because of this, TECH has created this program that, in a theoretical-practical way, will allow the doctor to increase their skills in the antibiotic treatment of numerous infections.

2. Gaining In-depth Knowledge from the Experience of Top Specialists

The didactic resources to which the student will have access in this Hybrid Master's Degree are developed by the best medical experts in infectious diseases, so its contents offered will be very useful in the performance of the profession. Furthermore, during your practical internship, you will be supervised by high-caliber professionals who will help you to improve your health care skills.

3. Entering First-Class Clinical Environments

TECH carefully selects all the centers available for the internships of its Hybrid Master's Degree. As a result, the specialist will have guaranteed access to a prestigious clinical environment in the field of infectious diseases. In this way, you will be able to see the day-to-day work of a demanding, rigorous and exhaustive sector, always applying the latest theses and scientific postulates in its work methodology.





4. Combining the Best Theory with State-of-the-Art Practice

In the academic market, many programs offer a series of contents that, when it comes down to it, do not have a great professional relevance. For this reason, TECH has created an innovative learning model, which combines an excellent theoretical learning with a practical stage of 3 weeks in which the student will be able to carry out everything learned in a real work environment.

5. Expanding the Boundaries of Knowledge

TECH offers the possibility of completing the internships of this program in important centers. This way, the specialist will be able to expand their frontiers and catch up with the best professionals, who practice in first class centers and in different continents. A unique opportunity that only TECH could offer.

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*You will have full practical immersion
at the center of your choice"*

03 Objectives

The Hybrid Master's Degree in Clinical Infectious Diseases and Antibiotic Therapeutics has been created with the intention of providing the doctor with the latest advances in the detection and pharmacological treatment of infectious diseases. In this sense, it will expand their health capacities to face with solvency different viral, bacterial or parasitic pathologies that affect human beings. In order to preserve teaching efficiency, a series of general and specific objectives have been designed for this program.



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Through this program, you will increase your diagnostic and therapeutic skills in infectious diseases in order to perform your medical practice with greater safety"



General Objective

- The general objective of this Hybrid Master's Degree is to allow professionals to expand and update their diagnostic and therapeutic techniques in the field of infectious diseases. In addition, it can be completed by combining an excellent theoretical learning with a hospital internship of 120 hours in a high level center



*Upon completion of the program,
you will approach fungal diseases
from a point of view supported by
the latest scientific evidence"*





Specific Objectives

Module 1. Clinical Research in Infectious Diseases

- ♦ Know the principles of the clinical method in the process of the diagnosis of infectious diseases
- ♦ Manage Epidemiology in the study of infectious diseases
- ♦ In-depth learning about clinical epidemiology and evidence-based medicine
- ♦ Understanding the behavior of infectious diseases in the population
- ♦ Knowing how to deal with epidemic outbreaks

Module 2. Microbiological Diagnosis and Other Examinations for Infectious Diseases

- ♦ Understand the organization, structure and operation of the microbiology laboratory
- ♦ Integrate the principles of the use of microbiological tests in patients with infectious pathologies and how to perform the sampling process
- ♦ Correctly perform protocols for virological, bacteriological, mycological and parasitological studies
- ♦ Learn how to properly interpret microbiological studies
- ♦ Understand the concepts of biosecurity and bioterrorism

Module 3. The Immune System and Infections in the Immunosuppressed Host

- ♦ Understand the structure and development of the immune system, its composition, which organs compose it and its chemical mediators
- ♦ Understand the immune response to viral and bacterial infections
- ♦ Recognize the most frequent clinical manifestations of immunosuppression
- ♦ Identify the most frequent clinical manifestations of febrile syndrome in neutropenic patients

Module 4. General Elements of Infectious Diseases

- ♦ Update the general and basic concepts of the infectious health-disease process, as well as the stages of the infectious process
- ♦ Recognize the most frequent symptoms and signs in patients with infectious diseases
- ♦ Study the types of fever that can occur in different situations and their most frequent complications
- ♦ Describe septic shock based on its clinical manifestations and differential features from other types of shock

Module 5. Viral and Antiviral Diseases

- ♦ Develop the principles of virology and understand the epidemiology of viral infections
- ♦ Study the different types of viral hemorrhagic diseases, arbovirosis, herpetic or exanthematous viral diseases, among others
- ♦ Recognize the main antivirals for respiratory infections and understand how their mechanism of action works

Module 6. Latest Information on Coronavirus Infections

- ♦ Address in detail and depth the most up-to-date scientific evidence on the development and spread of Coronaviruses
- ♦ Highlight the role of immunity in coronavirus infections and their complications
- ♦ Emphasize the development of future antivirals and other therapeutic modalities for coronavirus infections

Module 7. HIV/AIDS Infection

- ♦ Determine the epidemiology of HIV and its morbidity globally and by geographic region
- ♦ Associate major and minor opportunistic diseases and to know the application for their prophylaxis

Module 8. Bacterial Diseases and Antimicrobials

- ♦ Treating different types of bacterial skin infections
- ♦ Describe the clinical features of community-acquired pneumonia or tuberculosis, its diagnosis and management
- ♦ Point out the clinical characteristics of urinary tract and gynecological infections in women, their diagnosis and treatment

Module 9. Fungal Diseases

- ♦ Increase medical knowledge about deep and frequent fungal infections
- ♦ Identify the particularities of the most frequent fungal infections such as Cryptococcosis, Histoplasmosis or Aspergillosis

Module 10. Parasitic and Tropical Diseases

- ♦ Identify the diagnosis, pathogenesis, diagnosis and treatment of diseases such as malaria or intestinal protozoa pathologies
- ♦ Apply pharmacokinetics and pharmacodynamics to different parasitic and tropical diseases such as antiprotozoal or helminth anti-parasitic drugs

Module 11. Nosocomial Infections Associated with Healthcare and Patient Safety

- ♦ Recognize surgical site infection through in-depth knowledge of its definition, epidemiology, most frequent germs and therapeutic conduct
- ♦ Identify nosocomial pneumonia associated with mechanical ventilation, establishing general concepts, epidemiology, risk factors, etiology, diagnosis, prevention and the most commonly used antibiotics
- ♦ Apply the main internationally recommended measures for the control of nosocomial infection



Module 12. Antimicrobial Resistance

- ♦ Understand the genetic and acquired mechanisms of antimicrobial resistance
- ♦ Analyze viral, fungal and parasitic resistance and their therapeutic alternatives
- ♦ Update professional knowledge based on the global program for the control of antimicrobial resistance and the research of new antibiotics

Module 13. The Correct Use of Antimicrobials

- ♦ Apply the use of antimicrobials in special situations

Module 14. The Role of Infectologists in Health Services

- ♦ Acquire the competences and skills of the infectologist
- ♦ Put in context the functions of the infectologist in the health care team

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Boost your career path with holistic teaching, allowing you to advance both theoretically and practically"

04 Skills

Once the evaluations of the Hybrid Master's Degree in Clinical Infectious Diseases and Antibiotic Therapeutics have been passed, the doctor will have a series of competencies that will allow them to offer the latest care in the field of infectious diseases to each of their patients.



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This program will give you the tools you need to improve your infectious disease patient care based on the latest scientific evidence”



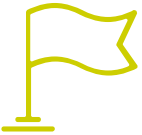
General Skills

- ♦ Increase the diagnostic and therapeutic capabilities of doctors in the field of infectious diseases and the health care of their patients
- ♦ Learn skills to manage, advise or lead multidisciplinary teams for the study of infectious diseases

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Thanks to this program, you will acquire the most efficient strategies to combat antimicrobial resistance in different types of infectious pathologies"





Specific Skills

- Apply existing control measures to prevent the transmission of these diseases between countries, in real and/or simulated
- Evaluate the epidemiological aspects related to infectious diseases that allow to exercise actions for the control of the same in the community
- Identify, in a timely manner, the appearance of new diseases or the rise of emerging or re-emerging diseases, based on the application of the scientific method of the profession
- Timely diagnosis of the most frequent or new infections based on clinical manifestations for their correct treatment, rehabilitation, and control
- Detect occupational, social and environmental risk factors that favor the development of these diseases in the community
- Establish the symptoms and signs most frequently associated with infectious diseases
- Master the most current elements of the role of the immune system in the response to different types of microbes
- Analyze the main opportunistic infections in patients with different types and degrees of immunosuppression
- Apply prevention and control measures to reduce morbidity and mortality in chronic diseases
- Understand the clinical, epidemiological, diagnostic and therapeutic elements for the main epidemiological threats in the world population such as arbovirosis, HIV/AIDS infection, parasitosis, TB and hemorrhagic diseases
- Halt the progression of antibiotic resistance, based on reasoned therapeutics and supported by the best scientific evidence
- Use the epidemiological and clinical approach in the study of infectious disease outbreaks
- Provide assistance to international travelers, based on the mastery of the main risks and diseases in this vulnerable group
- Correctly use and interpret all microbiological studies and other diagnostic resources in the care of their patients

05

Educational Plan

The syllabus of this program is composed of 14 modules with which the student will improve their knowledge in the diagnosis of infectious diseases and their corresponding antibiotic treatment. Moreover, it will be possible by means of excellent didactic materials to which you will have access throughout this Hybrid Master's Degree, and that are present in different types of textual and multimedia format. With this, combined with a 100% online method, TECH aims to offer an education that adapts to the learning pace of each of its students.

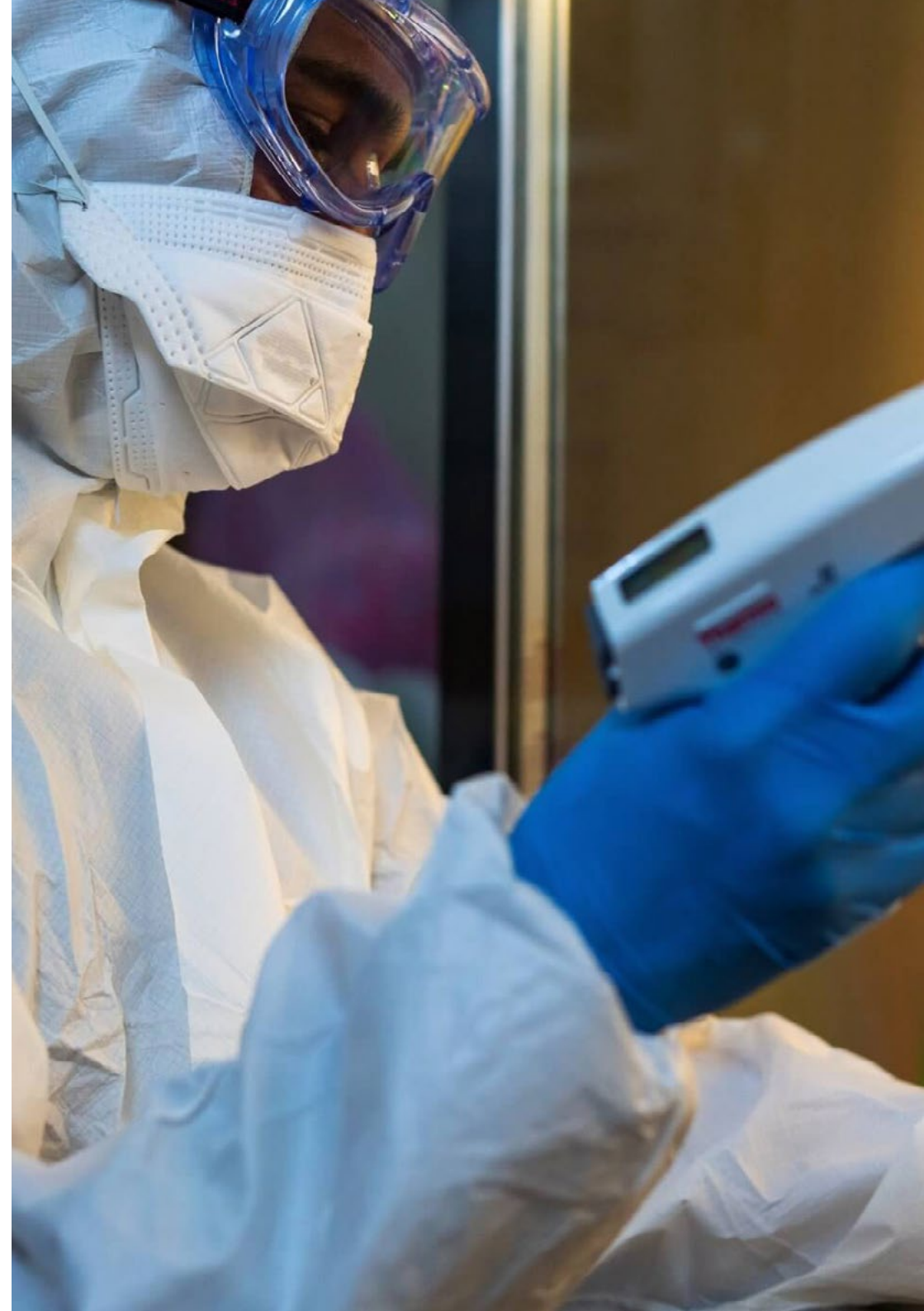


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The 100% online method characteristic of this program will allow you to achieve an excellent learning experience without the need to leave your own home"

Module 1. Clinical Research in Infectious Diseases

- 1.1. The Clinical Method in the Diagnostic Process of Infectious Diseases
 - 1.1.1. Fundamental Concepts of the Clinical Method: Stages and Principles
 - 1.1.2. The Clinical Method and its Usefulness in Infectology
 - 1.1.3. Most Common Errors in the Application of the Clinical Method
- 1.2. Epidemiology in the Study of Infectious Diseases
 - 1.2.1. Epidemiology as a Science
 - 1.2.2. The Epidemiological Method
 - 1.2.3. Epidemiology Tools Applies in the Study of Infectious Diseases
- 1.3. Clinic Epidemiology and Scientific Evidence-Based Medicine
 - 1.3.1. Scientific Evidence and the Clinical Experience
 - 1.3.2. The Importance of Evidence-Based Medicine in Diagnosis and Treatment
 - 1.3.3. Clinical Epidemiology as a Powerful Weapon of Medical Thinking
- 1.4. Behavior of Infectious Diseases in the Population
 - 1.4.1. Endemic
 - 1.4.2. Epidemic
 - 1.4.3. Pandemic
- 1.5. Confronting Epidemic Outbreaks
 - 1.5.1. Diagnosis of Epidemic Outbreaks
 - 1.5.2. Measures for the Control of Epidemic Outbreaks
- 1.6. Epidemiological Monitoring
 - 1.6.1. Types of Epidemiological Monitoring
 - 1.6.2. Designs of an Epidemiological Monitoring Systems
 - 1.6.3. Usefulness and Importance of Epidemiological Monitoring
- 1.7. International Health Regulations
 - 1.7.1. Components of International Health Regulations
 - 1.7.2. Diseases Subject to International Sanitary Control
 - 1.7.3. Importance of International Health Regulations
- 1.8. Mandatory Reporting Systems for Infectious Diseases
 - 1.8.1. Characteristics of Diseases Subject to Mandatory Reporting
 - 1.8.2. Role of the Doctor in Mandatory Reporting Systems for Infectious Diseases





1.9. Vaccines

- 1.9.1. Immunological Basis of Vaccination
- 1.9.2. Development and Production of Vaccines
- 1.9.3. Diseases Preventable with Vaccines
- 1.9.4. Experiences and Results of the Vaccine System in Cuba

1.10. Research Methodology in the Field of Health

- 1.10.1. The importance of Public Health in Research Methodology as a Science
- 1.10.2. Scientific Thought in Healthcare
- 1.10.3. The Scientific Method
- 1.10.4. Stages of Scientific Research

1.11. Information Management and the Use of New Information and Communication Technologies (ICT)

- 1.11.1. The Use of New ICT in the Management of Knowledge for Healthcare Professionals in the Professional Clinical, Teacher and Research Work
- 1.11.2. Information Literacy

1.12. Design of Research Studies for Infectious Diseases

- 1.12.1. Types of Studies in Healthcare and Medical Sciences
- 1.12.2. The Design of Research Applied to Infectious Diseases

1.13. Descriptive and Inferential Statistics

- 1.13.1. Summary Measures for the Different Variables in Scientific Research
- 1.13.2. Central Tendency Measures: Mean, Mode and Median
- 1.13.3. Dispersion Measures: Variants and Standard Deviation
- 1.13.4. Statistical Estimation
- 1.13.5. Population and Sample
- 1.13.6. Tools for Inferential Statistics

1.14. Design and Use of Databases

- 1.14.1. Types of Databases
- 1.14.2. Programs and Statistical Packages for the Management of Databases

1.15. Scientific Research Protocol

- 1.15.1. Protocol Components of Scientific Research
- 1.15.2. Usefulness of Protocol of Scientific Research

1.16. Clinical Trials and Meta Analysis

- 1.16.1. Types of Clinical Trials
- 1.16.2. The Role of a Clinical Trial in Healthcare Research
- 1.16.3. Meta Analysis: Conceptual Definitions and Their Methodological Design
- 1.16.4. Application of Meta-Analyses and Their Role in the Medical Sciences

- 1.17. Critical Reading of Research Results
 - 1.17.1. Medical Journals and their Role in the Dissemination of Scientific Information
 - 1.17.2. Medical Journals of High-Impact on a Global Level in the Field of Infectology
 - 1.17.3. Methodological Tools for Critical Reading of Scientific Literature
- 1.18. Publication of Scientific Research Results
 - 1.18.1. The Scientific Article
 - 1.18.2. Types of Scientific Articles
 - 1.18.3. Methodology Requirements for the Publication of Scientific Research Results
 - 1.18.4. The Process of Scientific Publications in Medical Journals

Module 2. Microbiological Diagnosis and Other Examinations for Infectious Diseases

- 2.1. Organization, Structure and Functioning of the Microbiology Laboratory
 - 2.1.1. Organization and Structure of the Microbiology Laboratory
 - 2.1.2. Functioning of a Microbiology Laboratory
- 2.2. Principles of the Use of Microbiological Examinations in Patients with Infectious Pathologies The Process of Collecting Specimens
 - 2.2.1. The Role of Microbiological Studies in the Diagnosis of Infectious Diseases
 - 2.2.2. The Microbiological Sampling Process: Pre-analytical, Analytical, and Post-analytical Stages.
 - 2.2.3. Sampling Requirements for the Main Microbiological Studies used in Daily Clinical Practice: Blood, Urine, Stool, Sputum
- 2.3. Virological Studies
 - 2.3.1. Types of Virus and Their General Characteristics
 - 2.3.2. General Characteristics of Virological Studies
 - 2.3.3. Viral Culture
 - 2.3.4. Viral Genome Studies
 - 2.3.5. Studies of Antigens and Antibodies Against the Virus

- 2.4. Bacteriological Studies
 - 2.4.1. Classification of Bacteria
 - 2.4.2. General Characteristics of Bacteriological Studies
 - 2.4.3. Stains for Bacterial Identification
 - 2.4.4. The Study of Bacterial Antigens
 - 2.4.5. Cultivation Methods: General and Specific
 - 2.4.6. Bacteria That Need Special Study Methods
- 2.5. Mycological Studies
 - 2.5.1. Classification of Fungi
 - 2.5.2. Main Mycological Studies
- 2.6. Parasitological Studies
 - 2.6.1. Classification of Parasites
 - 2.6.2. Studies for Protozoa
 - 2.6.3. Studies for Helminths
- 2.7. Appropriate Interpretation of Microbiological Studies
 - 2.7.1. The Microbiological Clinical Interrelationship for the Interpretation of Microbiological Studies
- 2.8. Interpreted Reading of the Anti-biogram
 - 2.8.1. Traditional Interpretation of the Anti-biogram With Relation to the Sensitivity and Resistance to Antimicrobials
 - 2.8.2. Interpreted Reading of the Anti-biogram: Current Paradigm
- 2.9. Use of Microbial Map of an Institution
 - 2.9.1. What is a Microbial Map of an Institution?
 - 2.9.2. Clinical Application of the Microbial Map
- 2.10. Biosecurity
 - 2.10.1. Conceptual Definitions of Biosafety
 - 2.10.2. Importance of Biosafety for Health Services
 - 2.10.3. Universal Measures of Precaution
 - 2.10.4. Manage the Biological Waste in a Healthcare Institution
- 2.11. The Clinical Laboratory in the Study of Infectious Diseases
 - 2.11.1. Reactants of the Acute Phase
 - 2.11.2. Studies of Liver Function, Internal Environment, Coagulation and Renal Function in Sepsis
 - 2.11.3. Study of Inflammatory Liquids in the Diagnosis of Infections
 - 2.11.4. Biomarkers Usefulness in Clinical Practice

- 2.12. Imaging Studies for the Diagnosis of Infectious Pathology
 - 2.12.1. The Role of Imaging Studies in the Diagnosis of Infectious Diseases
 - 2.12.2. Ultrasound and its Role in the Comprehensive Evaluation of the Patient with Sepsis
- 2.13. The Role of Genetic and Immunological Studies
 - 2.13.1. Studies of Genetic Illnesses and Their Predisposition of Infectious Diseases
 - 2.13.2. Immunological Studies on Immunosuppressed Patients
- 2.14. Utility of Anatomic Pathology Studies
 - 2.14.1. Alterations in Cytological Studies According to the Type of the Biological Agent
 - 2.14.2. Necropsy and Its Importance in Infectious Mortality
- 2.15. Assessment of the Severity of Infectious Diseases
 - 2.15.1. Prognosis Scales in the Care of Patients with Infectious Pathologies Based on Laboratory Studies and Clinical Elements
 - 2.15.2. SOFA Score Usefulness in the Current Day: Components of SOFA, What it Measures Usefulness in the Assessment of a Patient
 - 2.15.3. Main Complications in Infectious Diseases
- 2.16. Worldwide Campaign Against Sepsis
 - 2.16.1. Emergence and Evolution
 - 2.16.2. Objectives
 - 2.16.3. Recommendations and Impact
- 2.17. Bioterrorism
 - 2.17.1. Principle Infectious Agents Used in Bioterrorism
 - 2.17.2. International Regulations on the Management of Biological Samples

Module 3. The Immune System in Infections in the Immunosuppressed Host

- 3.1. Structure and Development of the Immune System
 - 3.1.1. Composition and Development of the Immune System
 - 3.1.2. Immune System Organs
 - 3.1.3. Immune System Cells
 - 3.1.4. Chemical Mediators in the Immune System
- 3.2. The Immune Response to Viral and Bacterial Infections
 - 3.2.1. Main Cells Implicated in the Immune Response to Viruses and Bacteria
 - 3.2.2. Main Chemical Mediators

- 3.3. The Immune Response to Mycotic and Parasitic Infections
 - 3.3.1. Immune Response Against Filamentous and Yeast Fungi
 - 3.3.2. Immune Response Against Protozoas
 - 3.3.3. Immune Response Against Helminths
- 3.4. Most Common Clinical Manifestations of Immunosuppression
 - 3.4.1. Types of Immunosuppression
 - 3.4.2. Clinical Manifestations According to the Infectious Agent
 - 3.4.3. Frequent Infections According to the Type of Immunosuppression
 - 3.4.4. Common Infections in Immunosuppressed Patients According to the Organ System Affected
- 3.5. The Fever Syndrome in Neutropenic Patients
 - 3.5.1. Most Common Clinical Manifestations
 - 3.5.2. Most Diagnosed Infectious Agents
 - 3.5.3. Most-Used Complementary Studies in the Integral Evaluation of a Neutropenic Fever Patient
 - 3.5.4. Therapeutic Recommendations
- 3.6. Management of an Immunosuppressed Patient with Sepsis
 - 3.6.1. Evaluation of Diagnosis, Prognosis and Treatment According to the Latest International Recommendations Endorsed by Scientific Evidence
- 3.7. Immunomodulatory and Immunosuppressive Therapy
 - 3.7.1. Immunomodulators and Their Clinical Use
 - 3.7.2. Immunosuppressors and Their Relation to Sepsis

Module 4. General Elements of Infectious Diseases

- 4.1. General and Basic Concepts of the Infectious Health-Illness Process
 - 4.1.1. The Stages of the Infectious Process
 - 4.1.2. The Systemic Inflammatory Response
 - 4.1.3. Sepsis
 - 4.1.4. Complications of Sepsis
- 4.2. Most Common Signs and Symptoms in Patients with Infectious Diseases
 - 4.2.1. Local Signs and Symptoms of Sepsis
 - 4.2.2. Systemic Signs and Symptoms of Sepsis
- 4.3. Main Infectious Syndromes
 - 4.3.1. Systemic Syndromes
 - 4.3.2. Local Syndromes

- 4.4. Fever of Unknown Origin (FUO)
 - 4.4.1. Classis FUO
 - 4.4.2. Nosocomial FUO
 - 4.4.3. FUO in an Immunosuppressed Patient
 - 4.4.4. FUO in HIV Infections
- 4.5. Fever and Rash
 - 4.5.1. Types of Rashes
 - 4.5.2. Main Infectious Agents Which Produce Rashes
- 4.6. Fever and Adenomegaly
 - 4.6.1. Characteristics of Infectious Adenomegalies
 - 4.6.2. Infections and Localized Adenomegalies
 - 4.6.3. Infections and Generalized Adenomegalies
- 4.7. Sexually Transmitted Infections (STI)
 - 4.7.1. Epidemiology of the STI
 - 4.7.2. Main Agents in Sexual Transmission
 - 4.7.3. Syndromic Approach to STIs
- 4.8. Septic Shock
 - 4.8.1. Epidemiology
 - 4.8.2. Pathophysiology
 - 4.8.3. Clinical Manifestations and Differential Masks from the Other Types of Shock
 - 4.8.4. Diagnosis and Evaluation of the Severity and Complications
 - 4.8.5. Therapeutic Behavior

Module 5. Viral and Antiviral Diseases

- 5.1. Principles of Virology
 - 5.1.1. Epidemiology of Viral Infections
 - 5.1.2. Fundamental Concepts in the Study of Viruses and Their Diseases
 - 5.1.3. Main Viruses Which Affect Humans
- 5.2. Hemorrhagic Viral Diseases
 - 5.2.1. Epidemiology
 - 5.2.2. Classification
 - 5.2.3. African Hemorrhagic Fevers
 - 5.2.4. South American Hemorrhagic Fevers
 - 5.2.5. Other Hemorrhagic Fevers

- 5.3. Arbovirus:
 - 5.3.1. General Concepts and Epidemiology of the Arboviruses
 - 5.3.2. Dengue.
 - 5.3.3. Yellow fever
 - 5.3.4. Chikungunya
 - 5.3.5. Zika
 - 5.3.6. Other Arboviruses
- 5.4. Herpetic Diseases
 - 5.4.1. Simple Herpes
 - 5.4.2. Zoster Herpes
- 5.5. Viral Exanthematous Diseases
 - 5.5.1. Rubella
 - 5.5.2. Measles
 - 5.5.3. Chickenpox
 - 5.5.4. Smallpox
 - 5.5.5. Other Exanthematous Diseases
- 5.6. Viral Hepatitis
 - 5.6.1. Non-Specified Viral Infections
 - 5.6.2. Hepatotropic Viruses
 - 5.6.3. Acute Viral Hepatitis
 - 5.6.4. Chronic Viral Hepatitis
- 5.7. Infectious Mononucleosis
 - 5.7.1. Epidemiology
 - 5.7.2. Etiological Agent
 - 5.7.3. Pathogenesis
 - 5.7.4. Clinical Picture
 - 5.7.5. Complications
 - 5.7.6. Diagnosis
 - 5.7.7. Treatment

5.8. Human Rabies

- 5.8.1. Epidemiology
- 5.8.2. Etiological Agent
- 5.8.3. Pathogenesis
- 5.8.4. Clinical Picture
- 5.8.5. Complications
- 5.8.6. Diagnosis
- 5.8.7. Treatment

5.9. Viral Encephalitis

- 5.9.1. Non-Herpetic Viral Encephalitis
- 5.9.2. Herpetic Viral Encephalitis
- 5.9.3. Slow Virus Encephalitis

5.10. Antivirals

- 5.10.1. General concepts
- 5.10.2. Main Definitions Related to Antivirals
- 5.10.3. Classification
- 5.10.4. Mechanisms of action

5.11. Main Antivirals for Herpes Viruses

- 5.11.1. Mechanisms of action
- 5.11.2. Antiviral Spectrum
- 5.11.3. Pharmacokinetics and Pharmacodynamics
- 5.11.4. Dose and Presentation

5.12. Main Antivirals for Respiratory Infections

- 5.12.1. Mechanisms of action
- 5.12.2. Antiviral Spectrum
- 5.12.3. Pharmacokinetics and Pharmacodynamics
- 5.12.4. Dose and Presentation

5.13. Main Antivirals for Hepatitis

- 5.13.1. Mechanisms of action
- 5.13.2. Antiviral Spectrum
- 5.13.3. Pharmacokinetics and Pharmacodynamics
- 5.13.4. Dose and Presentation

Module 6. Update on Coronavirus Infections

6.1. Discovery and Evolution of Coronaviruses

- 6.1.1. Discovery of Coronaviruses
- 6.1.2. Global Trends in Coronavirus Infections

6.2. Main Microbiological Characteristics and Members of the Coronavirus Family

- 6.2.1. General Microbiological Characteristics of Coronaviruses
- 6.2.2. Viral Genome
- 6.2.3. Principal Virulence Factors

6.3. Epidemiological Changes in Coronavirus Infections from its Discovery to the Present

- 6.3.1. Morbidity and Mortality of Coronavirus Infections from their Emergence to the Present

6.4. The Immune System and Coronavirus Infections

- 6.4.1. Immunological Mechanisms Involved in the Immune Response to Coronaviruses
- 6.4.2. Cytokine Storm in Coronavirus Infections and Immunopathology
- 6.4.3. Modulation of the Immune System in Coronavirus Infections

6.5. Pathogenesis and Pathophysiology of Coronavirus Infections

- 6.5.1. Pathophysiological and Pathogenic Alterations in Coronavirus Infections
- 6.5.2. Clinical Implications of the Main Pathophysiological Alterations

6.6. Risk Groups and Transmission Mechanisms of Coronaviruses

- 6.6.1. Main Sociodemographic and Epidemiological Characteristics of Risk Groups Affected by Coronavirus
- 6.6.2. Coronavirus Mechanisms of Transmission

6.7. Natural History of Coronavirus Infections

- 6.7.1. Stages of Coronavirus Infection

6.8. Latest Information on Microbiological Diagnosis of Coronavirus Infections

- 6.8.1. Sample Collection and Shipment
- 6.8.2. PCR and Sequencing
- 6.8.3. Serology Testing
- 6.8.4. Virus Isolation

6.9. Current Biosafety Measures in Microbiology Laboratories for Coronavirus Sample Handling

- 6.9.1. Biosafety Measures for Coronavirus Sample Handling

- 6.10. Up-to-Date Management of Coronavirus Infections
 - 6.10.1. Prevention Measures
 - 6.10.2. Symptomatic Treatment
 - 6.10.3. Antiviral and Antimicrobial Treatment in Coronavirus Infections
 - 6.10.4. Treatment of Severe Clinical Forms
- 6.11. Future Challenges in the Prevention, Diagnosis, and Treatment of Coronavirus
 - 6.11.1. Global Challenges for the Development of Prevention, Diagnostic, and Treatment Strategies for Coronavirus Infections

Module 7. HIVIDS Infection

- 7.1. Epidemiology
 - 7.1.1. Worldwide Morbidity and by Geographical Region
 - 7.1.2. Worldwide Mortality and by Geographical Region
 - 7.1.3. Main Vulnerable Groups
- 7.2. Etiopathogenesis
 - 7.2.1. Viral Replication Cycle
 - 7.2.2. Immune Response to HIV
 - 7.2.3. Sanctuary Sites
- 7.3. Clinical Classifications of Use
 - 7.3.1. Clinical Stages of HIV Infection
 - 7.3.2. Clinical and Immunological Classification of HIV Infection
- 7.4. Clinical Manifestations According to the Stages of the Illness
 - 7.4.1. General Clinical Manifestations
 - 7.4.2. Clinical Manifestations By Organs and Systems
- 7.5. Opportunistic Infections
 - 7.5.1. Minor Opportunist Illnesses
 - 7.5.2. Major Opportunist Illnesses
 - 7.5.3. Primary Prophylaxis of Opportunistic Infections
 - 7.5.4. Secondary Prophylaxis of Opportunistic Infections
 - 7.5.5. Neoplasms in the Patient with HIV Infection
- 7.6. Diagnosis in the HIV/AIDS Infection
 - 7.6.1. Direct HIV Screening Methods
 - 7.6.2. Tests for Antibodies Against HIV

- 7.7. Antiretroviral Treatment
 - 7.7.1. Antiretroviral Treatment Criteria
 - 7.7.2. Main Antiretroviral Drugs
 - 7.7.3. Monitoring of Antiretroviral Treatment
 - 7.7.4. Antiretroviral Treatment Failure
- 7.8. Integral Care for a Person Living With HIV/AIDS
 - 7.8.1. Cuban Model for Integral Care of People Living With HIV
 - 7.8.2. Global Experiences and WHO AIDS' Leadership in HIV/AIDS Control

Module 8. Bacterial Diseases and Antimicrobials

- 8.1. Principles of Bacteriology
 - 8.1.1. Fundamental Concepts of Use in Bacteriology
 - 8.1.2. Main Gram-Positive Bacteria and their Diseases
 - 8.1.3. Main Gram-Negative Bacteria and their Diseases
- 8.2. Bacterial Skin Infections
 - 8.2.1. Folliculitis
 - 8.2.2. Furunculosis
 - 8.2.3. Anthrax
 - 8.2.4. Superficial Abscesses
 - 8.2.5. Erysipelas
- 8.3. Community-Acquired Pneumonia (CAP)
 - 8.3.1. Epidemiology
 - 8.3.2. Etiology
 - 8.3.3. Clinical Picture
 - 8.3.4. Diagnosis
 - 8.3.5. Prognosis Scales
 - 8.3.6. Treatment
- 8.4. Tuberculosis
 - 8.4.1. Epidemiology
 - 8.4.2. Etiopathogenesis
 - 8.4.3. Clinical Manifestations
 - 8.4.4. Classification
 - 8.4.5. Diagnosis
 - 8.4.6. Treatment

8.5. Infections of Urinary Tract and Gynecologic Infections in Women

- 8.5.1. Classification
- 8.5.2. Etiology
- 8.5.3. Clinical Picture
- 8.5.4. Diagnosis
- 8.5.5. Treatment

8.6. Bacterial Meningitis

- 8.6.1. Immunology of the Subarachnoid Space
- 8.6.2. Etiology
- 8.6.3. Clinical Picture and Complications
- 8.6.4. Diagnosis
- 8.6.5. Treatment

8.7. Osteoarticular Infections

- 8.7.1. Septic Arthritis
- 8.7.2. Osteomyelitis
- 8.7.3. Infectious Myositis

8.8. Enteric and Intra-Abdominal Infections

- 8.8.1. Acute Gastroenteritis
- 8.8.2. Acute Enterocolitis
- 8.8.3. Primary Peritonitis
- 8.8.4. Secondary Peritonitis

8.9. Zoonotic

- 8.9.1. Concept
- 8.9.2. Epidemiology
- 8.9.3. Main Zoonotic Diseases
- 8.9.4. Leptospirosis

8.10. Antibacterials

- 8.10.1. General concepts
- 8.10.2. Classification
- 8.10.3. Mechanisms of Action for Antimicrobials

8.11. Betalactams: Penicillin and Betalactamase Inhibitors

- 8.11.1. Structure of the Beta-Lactam Ring
- 8.11.2. Penicillins: Classification, Mechanisms of Action, Antimicrobial Spectrum, Pharmacokinetics, Pharmacodynamics, Dosage and Presentation
- 8.11.3. Beta-lactamases: Types and Action on Beta-Lactam Antibiotics
- 8.11.4. Main Beta-Lactamase Inhibitors
- 8.11.5. Uses and Therapeutic Indicators
- 8.11.6. Cephalosporins
- 8.11.7. Monobactams
- 8.11.8. Carbapenemics

8.12. Aminoglycosides, Tetracyclines and Glycopeptides

- 8.12.1. Aminoglycosides: Classification, Mechanisms of Action, Antimicrobial Spectrum, Pharmacokinetics, Pharmacodynamics, Dosage and Presentation
- 8.12.2. Tetracyclines: Classification, Mechanisms of Action, Antimicrobial Spectrum, Pharmacokinetics, Pharmacodynamics, Dosage and Presentation
- 8.12.3. Glycopeptides: Classification, Mechanisms of Action, Antimicrobial Spectrum, Pharmacokinetics, Pharmacodynamics, Dosage and Presentation

8.13. Lincosamides, Rifamycins, Antifolates

- 8.13.1. Lincosamides: Classification, Mechanisms of Action, Antimicrobial Spectrum, Pharmacokinetics, Pharmacodynamics, Dosage and Presentation
- 8.13.2. Rifampicin: Classification, Mechanisms of Action, Antimicrobial Spectrum, Pharmacokinetics, Pharmacodynamics, Dosage and Presentation
- 8.13.3. Antifolates: Classification, Mechanisms of Action, Antimicrobial Spectrum, Pharmacokinetics, Pharmacodynamics, Dosage and Presentation

8.14. Quinolones, Macrolides and Ketolides

- 8.14.1. Quinolones: Classification, Mechanisms of Action, Antimicrobial Spectrum, Pharmacokinetics, Pharmacodynamics, Dosage and Presentation
- 8.14.2. Macrolides: Classification, Mechanisms of Action, Antimicrobial Spectrum, Pharmacokinetics, Pharmacodynamics, Dosage and Presentation
- 8.14.3. Ketolides: Classification, Mechanisms of Action, Antimicrobial Spectrum, Pharmacokinetics, Pharmacodynamics, Dosage and Presentation

8.15. New Antibiotics for Gram-Positive Infections (Lipopeptides and Oxazolidinones)

- 8.15.1. Lipopeptides
- 8.15.2. Oxazolidinones

Module 9. Fungal Diseases

9.1. Introduction to Mycology and Superficial Mycotic Infections

- 9.1.1. General Concepts Used in Mycology
- 9.1.2. Fundamental Characteristics of Pathogenic Fungi
- 9.1.3. Superficial mycotic infections: epidermophytosis, tinea corporis, tinea capitis

9.2. Deep Mycotic Infections

- 9.2.1. Most Frequent Deep Mycoses
- 9.2.2. Main Clinical Manifestations of Deep Mycosis

9.3. Cryptococcosis

- 9.3.1. Epidemiology
- 9.3.2. Etiological Agent
- 9.3.3. Pathogenesis
- 9.3.4. Clinical Picture
- 9.3.5. Complications
- 9.3.6. Diagnosis
- 9.3.7. Treatment

9.4. Histoplasmosis

- 9.4.1. Epidemiology
- 9.4.2. Etiological Agent
- 9.4.3. Pathogenesis
- 9.4.4. Clinical Picture
- 9.4.5. Complications
- 9.4.6. Diagnosis
- 9.4.7. Treatment

9.5. Aspergillosis

- 9.5.1. Epidemiology
- 9.5.2. Etiological Agent
- 9.5.3. Pathogenesis
- 9.5.4. Clinical Picture
- 9.5.5. Complications
- 9.5.6. Diagnosis
- 9.5.7. Treatment

9.6. Systemic Candidiasis

- 9.6.1. Epidemiology
- 9.6.2. Etiological Agent
- 9.6.3. Pathogenesis
- 9.6.4. Clinical Picture
- 9.6.5. Complications
- 9.6.6. Diagnosis
- 9.6.7. Treatment

9.7. Coccidioidomycosis

- 9.7.1. Epidemiology
- 9.7.2. Etiological Agent
- 9.7.3. Pathogenesis
- 9.7.4. Clinical Picture
- 9.7.5. Complications
- 9.7.6. Diagnosis
- 9.7.7. Treatment

9.8. Blastomycosis

- 9.8.1. Epidemiology
- 9.8.2. Etiological Agent
- 9.8.3. Pathogenesis
- 9.8.4. Clinical Picture
- 9.8.5. Complications
- 9.8.6. Diagnosis
- 9.8.7. Treatment

9.9. Sporotrichosis

- 9.9.1. Epidemiology
- 9.9.2. Etiological Agent
- 9.9.3. Pathogenesis
- 9.9.4. Clinical Picture
- 9.9.5. Complications
- 9.9.6. Diagnosis
- 9.9.7. Treatment

Module 10. Parasitic and Tropical Diseases

- 10.1. Introduction to Parasitology
 - 10.1.1. General Concepts Used in Parasitology
 - 10.1.2. Epidemiology of the Main Parasitosis and Tropical Diseases
 - 10.1.3. Classification of Parasites
 - 10.1.4. Tropical Diseases and Fever Syndrome in the Tropics
- 10.2. Malaria.
 - 10.2.1. Epidemiology
 - 10.2.2. Etiological Agent
 - 10.2.3. Pathogenesis
 - 10.2.4. Clinical Picture
 - 10.2.5. Complications
 - 10.2.6. Diagnosis
 - 10.2.7. Treatment
- 10.3. Diseases from Intestinal Protozoas
 - 10.3.1. Main Intestinal Protozoa
 - 10.3.2. Diagnosis of Intestinal Protozoa
 - 10.3.3. Amebiasis and giardiasis
- 10.4. Filarial Diseases
 - 10.4.1. Epidemiology and the Worldwide Situation
 - 10.4.2. Clinical Syndromes
 - 10.4.3. Main Filarial Diseases: Wuchereria Bancrofti, Brugia malayi, Brugia timori, Onchocerca volvulus, Loa loa, Mansonella Perstans, Mansonella Streptocerca y Mansonella Ozzardi
- 10.5. Leishmaniasis
 - 10.5.1. Cutaneous Leishmaniasis
 - 10.5.2. Leishmaniasis Disease
- 10.6. Trypanosomiasis
 - 10.6.1. African Trypanosomiasis
 - 10.6.2. American Trypanosomiasis:
- 10.7. Schistosomiasis
 - 10.7.1. Schistosoma Haematobium
 - 10.7.2. Schistosoma Mansoni
 - 10.7.3. Schistosoma Japonicum
 - 10.7.4. Schistosoma Intercalatum

- 10.8. Intestinal Parasitism
 - 10.8.1. Epidemiology
 - 10.8.2. Ascariasis
 - 10.8.3. Oxiuriasis
 - 10.8.4. Hookworm and Necatoriasis
 - 10.8.5. Tricuriasis
- 10.9. Taeniasis Infections
 - 10.9.1. Intestinal Tapeworms
 - 10.9.2. Tissue Tapeworms
- 10.10. Antiparasitics II
 - 10.10.1. General concepts
 - 10.10.2. Main Definitions Used in the Management of Antiparasitics
 - 10.10.3. Classifications by chemical structure, mechanism of action or antiparasitic action
 - 10.10.4. Mechanisms of action
- 10.11. Antiprotozoals
 - 10.11.1. Classification
 - 10.11.2. Mechanisms of action
 - 10.11.3. Antiparasitic Spectrum
 - 10.11.4. Pharmacokinetics and Pharmacodynamics
 - 10.11.5. Dose and Presentation
- 10.12. Antiparasitic for Helminths
 - 10.12.1. Classification
 - 10.12.2. Mechanisms of action
 - 10.12.3. Antiparasitic Spectrum
 - 10.12.4. Pharmacokinetics and Pharmacodynamics
 - 10.12.5. Dose and Presentation

Module 11. Nosocomial Infections Associated with Healthcare and Patient Safety

- 11.1. Epidemiology of Nosocomial Infections
 - 11.1.1. Operative site Infection: Definition, Epidemiology, Most Frequent Germs, and Therapeutic Approach
 - 11.1.2. Nosocomial Pneumonia Associated with Mechanical Ventilation: General Concepts, Epidemiology, Risk Factors, Aetiology, Diagnosis, Prevention and Most Commonly Used Antibiotics

- 11.2. Infection Associated With Non-tunneled Peripheral and Central Venous Catheters and Urinary Catheters
 - 11.2.1. Epidemiology
 - 11.2.2. Etiology
 - 11.2.3. Risk Factors
 - 11.2.4. Behavior for its Diagnosis and Treatment
- 11.3. Clostridium Difficile Infection
 - 11.3.1. Epidemiology
 - 11.3.2. Risk Factors
 - 11.3.3. Clinical Manifestations
 - 11.3.4. Diagnosis
 - 11.3.5. Treatment
- 11.4. Global Vision of the Infection in Critical Patients in the ICU
 - 11.4.1. Epidemiology
 - 11.4.2. Risk Factors
 - 11.4.3. Etiology
 - 11.4.4. Prevention
 - 11.4.5. Most-Used Antibiotics
- 11.5. Infections Associated With Devices Used in Medicine
 - 11.5.1. Infections Associated with Biofilm
 - 11.5.2. Infections From Devices Used in Orthopedics
 - 11.5.3. Infection of Cardiovascular Surgical Devices
 - 11.5.4. Infection in Neurosurgical Devices
 - 11.5.5. Infections of Implants and Prostheses
- 11.6. Universal Measures for Nosocomial Infection
 - 11.6.1. Main Measures Internationally Recommended the Control of Nosocomial Infection
- 11.7. Infections Associated With Healthcare
 - 11.7.1. Definition
 - 11.7.2. Epidemiology
 - 11.7.3. Etiology
 - 11.7.4. Antimicrobials Used

Module 12. Antimicrobial Resistance

- 12.1. Epidemiology. From Molecular to Socioeconomic
 - 12.1.1. Analysis of Molecular Evolution, Genetics, Clinical Manifestation, Epidemiology and Socioeconomics of the Resistance to Antibiotics
 - 12.1.2. Mortality Due to Super Bacteria
 - 12.1.3. Most Lethal Super Bacteria
- 12.2. Mechanisms of Antimicrobial Resistance
 - 12.2.1. Genetic Mechanisms
 - 12.2.2. Acquired Mechanisms
- 12.3. MRSA and GISA
 - 12.3.1. Epidemiology
 - 12.3.2. Resistance Mechanisms
 - 12.3.3. Alternative Treatments
- 12.4. Resistant Enterobacteria
 - 12.4.1. Epidemiology
 - 12.4.2. Resistance Mechanisms
 - 12.4.3. Alternative Treatments
- 12.5. Resistant Pneumococcus
 - 12.5.1. Epidemiology
 - 12.5.2. Resistance Mechanisms
 - 12.5.3. Alternative Treatments
- 12.6. Viral Resistance
 - 12.6.1. Epidemiology
 - 12.6.2. Resistance Mechanisms
 - 12.6.3. Alternative Treatments
- 12.7. Mycotic and Parasitic Resistance
 - 12.7.1. Epidemiology
 - 12.7.2. Resistance Mechanisms
 - 12.7.3. Alternative Treatments
- 12.8. Worldwide Program for the Control of Antimicrobial Resistance and Research into New Antibiotics
 - 12.8.1. Objectives and Action of the Worldwide Program for the Control of Antimicrobial Resistance
 - 12.8.2. Research into New Antibiotics for Multiresistant Germs
 - 12.8.3. Emergence of Other Forms of Treatment for Infection Control

Module 13. The Correct Use of Antimicrobials

- 13.1. Basic Principles in the Selection and Use of Antimicrobials
 - 13.1.1. Elements of an Antimicrobial
 - 13.1.2. Elements of a Germ
 - 13.1.3. Elements of the Host
- 13.2. Use of Antimicrobials in Special Situations in the Host
 - 13.2.1. Use in Kidney Failure
 - 13.2.2. Use in Pregnancy
 - 13.2.3. Use in Liver Failure
- 13.3. The Role of Policies and Rational Use of Antibiotics Programs and Their Impact on the Antimicrobial Resistance and The Cost of Medical Care
 - 13.3.1. Situation of Programs and Policies for the Rational Use of Antibiotics
 - 13.3.2. Impact of Programs and Policies in the Use of Antibiotics
 - 13.3.3. Use of Clinical Practice Guides
- 13.4. Pharmotherapeutic Committees as Tools for the Control and Evaluation of the Use of Antibiotics
 - 13.4.1. Structure
 - 13.4.2. Objectives
 - 13.4.3. Functions
 - 13.4.4. Impact Results
- 13.5. Antibiotic Prophylaxis in Surgery
 - 13.5.1. Classification of Surgical Interventions
 - 13.5.2. Uses of Antibiotic Prophylaxis According to the Type of Surgical Intervention
 - 13.5.3. Most Commonly Used Schemes of Antibiotic Prophylaxis in Surgery
- 13.6. Reasoned Therapeutics in the Use of Antibiotics
 - 13.6.1. Stages of Reasoned Therapeutics
 - 13.6.2. Importance of Reasoned Therapeutics
- 13.7. The Worldwide Experience in the Control of the Use of Antibiotics
 - 13.7.1. Main Worldwide Experiences in the Control of the Use of Antibiotics

Module 14. The Role of Infectologists in Health Services

- 14.1. Infectology and its Importance in Medical Care Within Any Specialist Field
 - 14.1.1. The Universal Nature of Infectious Pathology in Medical Specialties
 - 14.1.2. Mastering Antibiotic Treatment
- 14.2. Skills and Abilities of an Infectologist
 - 14.2.1. Skills of an Infectologist
 - 14.2.2. Abilities of an Infectologist
- 14.3. The Role of Infectologists in Health Teams
 - 14.3.1. Functions of Infectologists in Health Teams in the Different Levels of the Health System
- 14.4. Infectious Disease Consultation
 - 14.4.1. Functions of an Infectologist's Consultation
 - 14.4.2. Pathologies to be Consulted
- 14.5. Scientific Update of the Infectologist's Medical Knowledge and the Future Challenges of Infectology
 - 14.5.1. Self-Training
 - 14.5.2. Training and Professional Achievement
 - 14.5.3. Future challenges for infectiology: the emergence of new diseases, antimicrobial resistance and the development of vaccines and antibiotics

06

Clinical Internship

After completing the theoretical stage of this Hybrid Master's Degree's program, a 3-week internship is planned in a reference hospital center, where the professional will have the opportunity to put into practice all the knowledge acquired throughout the program.



A close-up photograph of a petri dish containing a yellow agar medium. The letters "MRSA" are handwritten in black ink on the surface of the agar. The petri dish is positioned diagonally across the frame, with the top-left corner in the foreground and the bottom-right corner receding into the background. The background is a dark blue gradient with a lighter blue diagonal stripe.

MRSA

“

*Complete your internship
at a prestigious hospital
center to perfect your
professional medical skills”*

The practical phase of this Hybrid Master's Degree consists of a 3-week internship in a prestigious hospital center, from Monday to Friday, with 8-hour consecutive working days under the guidance of an associate specialist in the field.

During this period, the student will work with real patients and, as part of a multidisciplinary team, will assimilate up-to-date skills for the diagnosis and treatment of different infectious diseases.

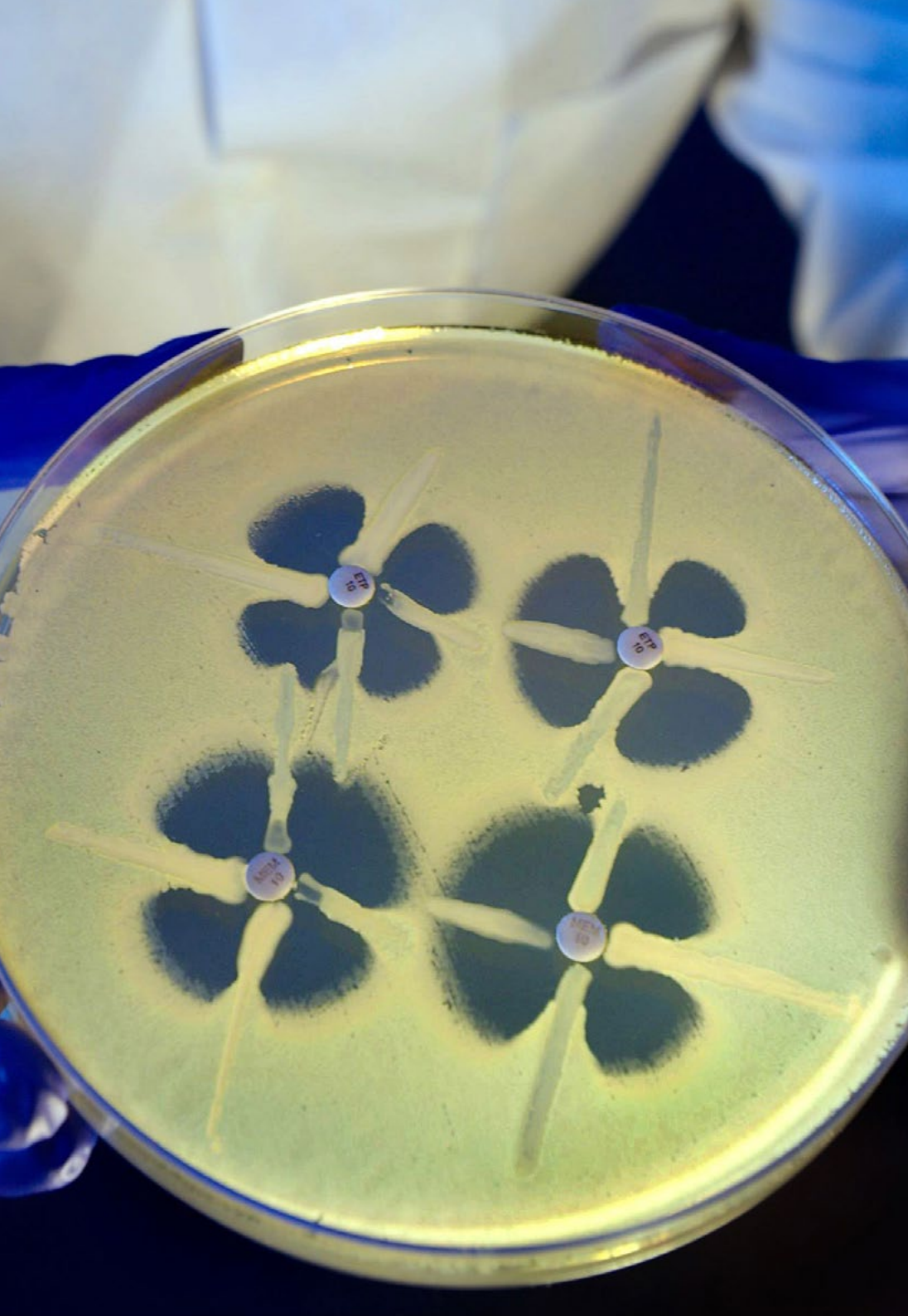
In this completely practical Internship Program, the activities are aimed at developing and perfecting the skills necessary to provide healthcare in areas and conditions that require highly qualified professionals, and are oriented towards specific expertise for practicing the activity, in a safe environment for the patient and with highly professional performance.

TECH offers you, therefore, an excellent opportunity to develop your skills working in a hospital with the latest technology and the best equipment, where the optimization of medical treatment is essential to ensure the recovery and adequate quality of life of patients affected by various infectious diseases.

Practical teaching will be carried out with the active participation of the student performing the activities and procedures of each area of competence (learning to learn and learning to do), with the support and guidance of professors and other training partners that facilitate teamwork and multidisciplinary integration as transversal competencies for medical practice (learning to be and learning to relate).



For several weeks, you will work one-on-one with top professionals in the field of infectious diseases"



The procedures described below will form the basis of the practical part of the internship, and their implementation is subject to both the suitability of the patients and the availability of the center and its workload, with the proposed activities being as follows:

Module	Practical Activity
Microbiological Diagnosis and Other Examinations for Infectious Diseases	Take the necessary samples for the elaboration of the different tests for the detection of infectious diseases.
	Carry out the protocols for the performance of virological, bacteriological, mycological and parasitological studies oriented to the detection of infectious diseases
	Properly interpret the results obtained through microbiological studies to detect the infectious pathology suffered by a patient
Bacterial Diseases and Antimicrobials	Treat efficiently the different bacterial infections that occur in the skin
	Diagnose and treat urinary tract and gynecological infections in women
	Therapeutically use penicillin and beta-lactamase inhibitors to combat various bacterial diseases
Fungal diseases, parasitic and tropical diseases	Provide the appropriate treatment for each of the most common fungal infections
	Diagnose and treat malaria or pathologies caused by intestinal protozoa
	Deal with different parasitic and tropical diseases, applying an approach based on pharmacokinetics and pharmacodynamics
Antimicrobial resistance and appropriate use of antimicrobial agents	Provide alternative treatment for patients who respond inadequately to antimicrobials
	Provide antimicrobial treatment for patients in special situations such as pregnant women or people with renal and hepatic insufficiency

Civil Liability Insurance

This institution's main concern is to guarantee the safety of the trainees and other collaborating agents involved in the internship process at the company. Among the measures dedicated to achieving this is the response to any incident that may occur during the entire teaching-learning process.

To this end, this entity commits to purchasing a civil liability insurance policy to cover any eventuality that may arise during the course of the internship at the center.

This liability policy for interns will have broad coverage and will be taken out prior to the start of the practical training period. That way professionals will not have to worry in case of having to face an unexpected situation and will be covered until the end of the internship program at the center.



General Conditions of the Internship Program

The general terms and conditions of the internship agreement for the program are as follows:

1. TUTOR: During the Hybrid Master's Degree, students will be assigned with two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned with an academic tutor whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both clinical and academic.

2. DURATION: The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.

3. ABSENCE: If the students does not show up on the start date of the Hybrid Master's Degree, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

4. CERTIFICATION: Professionals who pass the Hybrid Master's Degree will receive a certificate accrediting their stay at the center.

5. EMPLOYMENT RELATIONSHIP: the Hybrid Master's Degree shall not constitute an employment relationship of any kind.

6. PRIOR EDUCATION: Some centers may require a certificate of prior education for the Hybrid Master's Degree. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed.

7. DOES NOT INCLUDE: The Hybrid Master's Degree will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed.

However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.

07

Where Can I Do the Clinical Internship?

For the final internship period of the Hybrid Master's Degree in Clinical Infectious Diseases and Antibiotic Therapeutics, TECH has selected hospitals characterized by their latest technology and high medical quality, so that students can adapt this experience to their professional requirements.





“

*TECH gives you the opportunity
to do your internship in hospital
centers with the latest technology”*

tech 44 | Where Can I Do the Clinical Internship?



The student will be able to complete the practical part of this Hybrid Master's Degree at the following centers:



Policlínico HM Sanchinarro

Country	City
Spain BORRAR	Madrid

Management: Av. de Manoteras, 10,
28050, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:
Gynecological Care for Obstetricians
- Nursing in the Digestive Tract Department





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Boost your career path with holistic teaching, allowing you to advance both theoretically and practically”

09 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"

Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

“*At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world*”



You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.



The student will learn to solve complex situations in real business environments through collaborative activities and real cases.

A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

“*Our program prepares you to face new challenges in uncertain environments and achieve success in your career*”

The case method is the most widely used learning system in the best faculties in the world. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question we face in the case method, an action-oriented learning method. Throughout the program, the studies will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

Relearning Methodology

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

In 2019, we obtained the best learning results of all online universities in the world.

At TECH, you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.



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.

With this methodology, we have trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, markets, and financial instruments. All this in a highly demanding environment, where the students have a strong socio-economic 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 training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.



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 highly specific and precise.

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.



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.



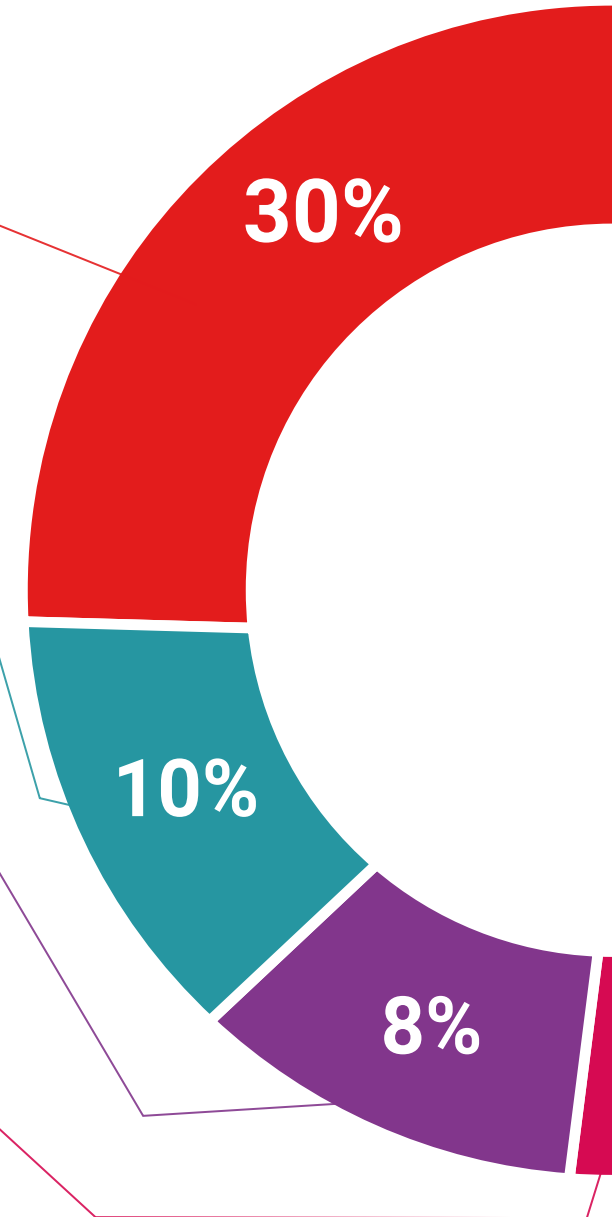
Practising Skills and Abilities

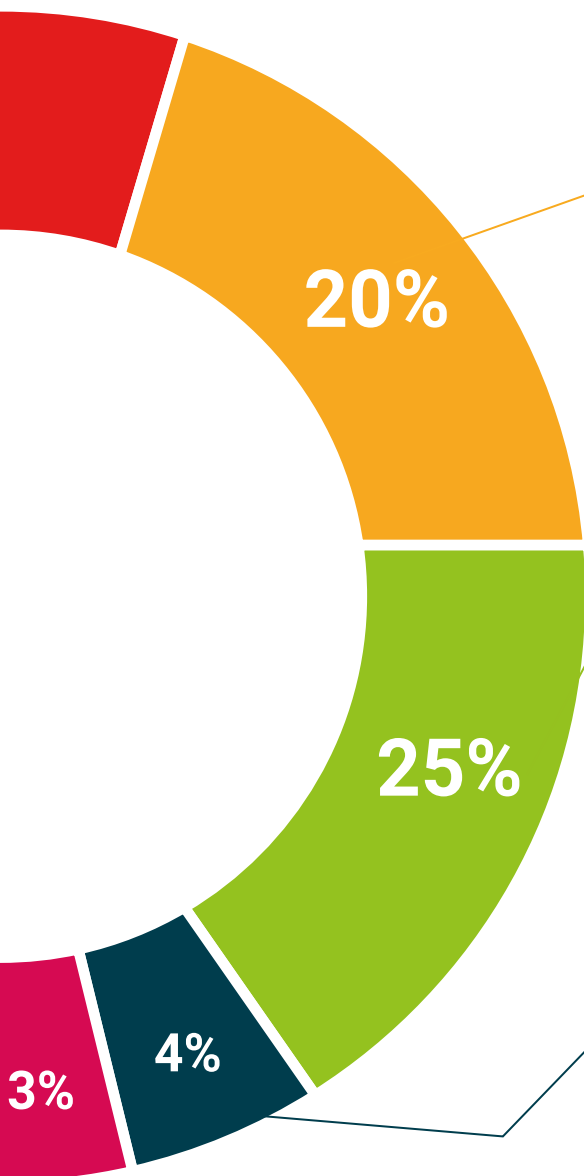
They will carry out activities to develop specific competencies and skills in each thematic area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



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.





Case Studies

Students will complete a selection of the best case studies chosen specifically for this situation. Cases that are presented, analyzed, and supervised by the best specialists in the world.



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".



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.



09

Certificate

The Hybrid Master's Degree in Clinical Infectious Diseases and Antibiotic Therapeutics guarantees students, in addition to the most rigorous and up-to-date education, access to a Hybrid Master's Degree diploma 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 **Hybrid Master's Degree in Clinical Infectious Diseases and Antibiotic Therapeutics** 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.

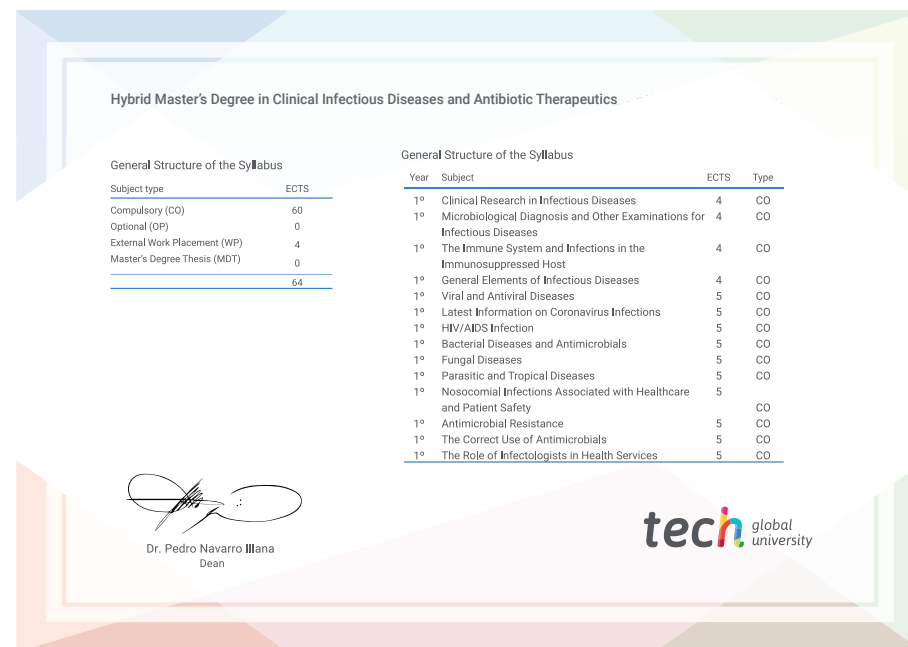
This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Hybrid Master's Degree in Clinical Infectious Diseases and Antibiotic Therapeutics**

Modality: **Hybrid (Online + Clinical Internship)**

Duration: **12 months**

Certificate: **TECH Technological University**





Hybrid Master's Degree
Clinical Infectious Diseases
and Antibiotic Therapy

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Global University

Credits: 60 + 4 ECTS

Hybrid Master's Degree

Clinical Infectious Diseases and
Antibiotic Therapy

